

Work and Home: Balancing the considerations and considering the balance



Proefschrift ter verkrijging van de graad van doctor aan de Universiteit Utrecht op gezag van de Rector Magnificus, Prof. dr. W.H. Gispen, ingevolge het besluit van het College voor Promoties in het openbaar te verdedigen op Maandag 12 Mei 2003 des ochtends te 10:30 uur door:

**Anthony Jude Montgomery geboren op 4 September 1971, te Dublin,
Ierland**

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TABLE OF CONTENTS

CHAPTER 1	INTRODUCTION	7
1.1	INTRODUCTION	7
1.2	POLITICAL AND SOCIETAL BACKGROUND	7
1.3	DEFINITION OF WORK-HOME /HOME-WORK INTERFERENCE	9
1.4	MEASUREMENT OF WORK-HOME AND HOME-WORK INTERFERENCE	11
1.5	THEORETICAL BACKGROUND	12
1.6	WORK-HOME /HOME-WORK INTERFERENCE: WHOSE PROBLEM IS IT?	14
1.7	EMPIRICAL OVERVIEW	16
1.7.1	<i>Prevalence of WHI and HWI</i>	16
1.7.2	<i>Antecedents of WHI and HWI</i>	17
1.7.3	<i>Structural variables</i>	22
1.7.4	<i>Consequences</i>	24
1.8	WORK-HOME /HOME-WORK INTERFERENCE AS A MEDIATOR	26
1.9	GENDER DIFFERENCES	30
1.10	CROSSOVER	32
1.11	MULTIPLE METHODS AND QUASI TRIANGULATION	33
1.12	OUTLINE OF THE THESIS	35
CHAPTER 2	WORK, HOME AND BURNOUT: AN INTERNET BASED STUDY	37
2.1	ABSTRACT	37
2.2	INTRODUCTION	37
2.2.1	<i>Empirical and Theoretical Background</i>	38
2.2.2	<i>Demands</i>	38
2.2.3	<i>Burnout</i>	40
2.2.4	<i>WHI as a Mediator</i>	41
2.2.5	<i>The Present Study</i>	42
2.2.6	<i>Generalizability of the Model</i>	42
2.3	METHOD	43
2.3.1	<i>Procedure</i>	43
2.3.2	<i>Participants</i>	43
2.3.3	<i>Measures</i>	44
2.3.4	<i>Analysis Strategy</i>	45
2.4	RESULTS	46
2.4.1	<i>Assessing the Representativeness of the Internet Sample</i>	46
2.4.2	<i>Confirmatory Factor Analyses</i>	47
2.4.3	<i>Descriptive Statistics</i>	48
2.4.4	<i>Model Testing for the Full Sample</i>	49
2.4.5	<i>Alternate models</i>	51



2.4.6	<i>Parameter estimates</i>	51
2.4.7	<i>Multiple Group Comparisons</i>	54
2.5	DISCUSSION	56
2.5.1	<i>Generalizability of the Model</i>	57
2.5.2	<i>The Internet as a Research Tool</i>	58
2.5.3	<i>Limitations</i>	58
CHAPTER 3 <u>WORK-HOME INTERFERENCE AMONG NEWSPAPER</u>		
<u>MANAGERS: ITS RELATIONSHIP WITH BURNOUT AND ENGAGEMENT</u>		60
3.1	ABSTRACT	60
3.2	INTRODUCTION	60
3.2.1	<i>Empirical & Theoretical Background</i>	61
3.2.2	<i>Demands</i>	62
3.2.3	<i>Resources</i>	64
3.2.4	<i>Engagement & Burnout</i>	64
3.2.5	<i>Hypothetical Model</i>	66
3.3	METHOD	66
3.3.1	<i>Procedure</i>	66
3.3.2	<i>Participants</i>	67
3.3.3	<i>Measures</i>	67
3.4	RESULTS	69
3.4.1	<i>Mediation paths</i>	73
3.4.2	<i>Moderation between Resources and Demands</i>	77
3.5	DISCUSSION	77
3.5.1	<i>Limitations</i>	79
3.5.2	<i>WHI & HWI</i>	80
CHAPTER 4 <u>CROSSOVER AND WORK-HOME INTERFERENCE</u>		82
4.1	ABSTRACT	82
4.2	INTRODUCTION	82
4.2.1	<i>Theoretical Background</i>	83
4.2.2	<i>Negative Affectivity</i>	85
4.2.3	<i>Outcome Variables</i>	86
4.2.4	<i>Aims and Hypotheses</i>	87
4.3	METHOD	88
4.3.1	<i>Sample & Procedure</i>	88
4.3.2	<i>Measures</i>	88
4.4	RESULTS	90
4.4.1	<i>Data screening</i>	90
4.4.2	<i>Sample Characteristics</i>	90
4.4.3	<i>Descriptive Analysis</i>	90

4.4.4	<i>Crossover</i>	94
4.5	DISCUSSION	97
4.5.1	<i>Potential crossover mechanisms</i>	99
4.5.2	<i>Limitations</i>	99
CHAPTER 5 IS WORK-HOME INTERFERENCE A PREDICTOR OR OUTCOME OF BURNOUT AND ENGAGEMENT?		101
5.1	ABSTRACT	101
5.2	INTRODUCTION	101
5.2.1	<i>Theoretical and Empirical Background</i>	102
5.2.2	<i>Job Demands</i>	104
5.2.3	<i>Job Resources</i>	105
5.2.4	<i>Burnout and Engagement</i>	106
5.2.5	<i>Direction of WHI</i>	107
5.2.6	<i>Hypotheses</i>	107
5.2.7	<i>Mediational Analysis</i>	108
5.3	METHOD	111
5.3.1	<i>Participants and Procedure</i>	111
5.3.2	<i>Measures</i>	111
5.3.3	<i>Strategy of Analyses</i>	113
5.4	RESULTS	115
5.4.1	<i>Data screening</i>	115
5.4.2	<i>Model Comparisons</i>	115
5.4.3	<i>Mediational Analysis</i>	127
5.5	DISCUSSION	129
5.5.1	<i>Comparison between the Demands and Resources Models</i>	132
5.5.2	<i>Limitations</i>	133
5.5.3	<i>Practical implications</i>	133
5.5.4	<i>Future research</i>	134
CHAPTER 6 DISCUSSION		135
6.1	RESEARCH QUESTION ONE: ANTECEDENTS AND OUTCOMES OF WHI/HWI	136
6.2	RESEARCH QUESTION TWO: WHI, HWI AND MEDIATION	138
6.3	RESEARCH QUESTION THREE: GENDER DIFFERENCES AND WHI/HWI	140
6.4	RESEARCH QUESTION FOUR: WHI, HWI AND CROSSOVER	142
6.5	RESEARCH QUESTION FIVE: THE WAY FORWARD FOR FUTURE RESEARCH	143
6.6	THE MEANING OF WORK AND HOME	145
6.7	THEORETICAL ISSUES	146
6.8	LIMITATIONS	148
CHAPTER 7 REFERENCES		153



<u>SUMMARY IN ENGLISH</u>	196
<u>SAMENVATTING (SUMMARY IN DUCTH)</u>	200



Chapter 1 Introduction

1.1 Introduction

Work and family constitute the dominant life roles for most employed adults in contemporary society. Thus, employed men and women are increasingly concerned about managing the conflicts experienced in fulfilling the dual demands and responsibilities of work and family roles. The unfolding changes in the composition of the workforce together with the growing proportion of workers in non-traditional family forms have focused heightened attention on the conflicts faced by employed men and women in balancing the competing demands and responsibilities of work and family roles (Parasuraman & Greenhaus, 1999). In a US study, work-life balance was ranked among the most important factor considered by individuals in accepting a new position (Galinsky, Bond & Friedman, 1993). Indeed, the growing concern about the problems in integrating the demands of work and home and the adverse effects it has for employees, families and employers have led to the emergence of work-personal life integration as a prominent social issue in Europe and the US, including The Netherlands.

1.2 Political and Societal Background

There is a longstanding interest and increasing involvement of the European Union (EU) in the relationship between paid work on the one hand, and the responsibilities and unpaid work arising from providing care for the family, on the other (Moss, 1996). The Eurospeak shorthand that appears in documents is the ‘reconciliation of employment and family responsibilities’. The major reason for the EU’s active involvement in promoting reconciliation between employment and family responsibilities arises from the Union’s commitment to the objective of gender equality. The 1994 White paper on European Social Policy highlights the aspiration of reconciliation and the need to address the unequal division of care and family responsibilities, on the part of the EU:

“Progress towards new ways of perceiving family responsibilities may slowly relieve the burden on women and allow men to play a more fulfilling role in society. However greater solidarity between men and women is needed if men are to take on



greater responsibility for the caring roles in our society and if flexibility in employment is not to lead to new pressures on women.” (European Commission 1994:43).

The need to address the issue of work-family balance or reconciliation is highlighted by the structural changes that have taken place in Europe and the Netherlands. Overall, the 25-49 (age group) share of the labour market has increased from 51% in 1960 to 62% in 1990, with further increases projected. Men’s employment in this age group has remained high and women’s employment (mainly among women with children) has increased steadily and is projected to do so (European Commission, 1992). At the same time, the average age for women in Europe to have a first child has moved upwards into this age group, presently at 27 years.

In the Netherlands, 58% of the total growth in employment (more than half a million people) is accounted for by women (Social & Cultural Report, 2000). Indeed, 1999 was the first year that more than 50% of women between 15 and 65 had paid work for at least 12 hours a week. The net participation rate of females (between 15-64) has risen dramatically from 29.2% in 1970 to 51% in 1999 (CBS, 1999). Indeed, the net participation rate rises to 73% when we only consider women who have achieved polytechnic (HBO in the Netherlands) or university education (CBS, 1999). Most interestingly, analyses show that structural characteristics (e.g. childcare, maternity leave) have a very limited effect on female participation. Grift, Plantenga, Schippers and Siegers (1999) estimate that the availability of three days of free childcare per week for all families with children aged 0-4 would in average increase the total supply of female labour by no more than one hour a week. Graafland (1999) estimates that scrapping the existing subsidies on childcare facilities (including the tax deduction) would reduce the total supply of female labour (expressed in hours) by only 1.52%. Although 1.52% of the female population is not insignificant, it does pale in somewhat when compared with the structural increase in female participation since 1970. Therefore, it seems that the increase in female participation can only to a small extent be explained by changes in women’s objective characteristics and circumstances. The progress has probably more to do with psychological factors such as changing ideas about women’s role in society and family life. For example, the percentage of the population who thought that a married woman with school age children and working was “not objectionable” was 70% in 1985 and 81% in 1997



(SCP, 1998). The historical and demographic trends suggest that women will increasingly participate in the workforce (and join their male colleagues), and as such the probability that work-home interference will become an ever-increasing problem for both sexes is surer than the ways in which it will express itself.

1.3 Definition of Work-Home /Home-Work Interference

One difficulty in synthesizing the literature of the work-home relationship is the differing terminology used by various authors to describe essentially the same constructs (Gutek, Repetti & Silver, 1998; Lewis & Cooper, 1998). For example, Greenhaus and Beutell (1985, p. 79) provide a summary of studies that illustrate the number of different terms. A review of the literature indicates that work-home interference has also been defined as: work-family conflict (Higgins & Duxbury, 1992), job-family role strain (Bohen & Viveros-Long, 1981; Kelly & Voydanoff, 1985), family/work role incompatibility (Jones & Butler, 1980) and interrole conflict (Kopelman, Greenhaus & Connolly, 1983). For the purposes of the present thesis, *work-home interference* will be the adopted label. Given the potential for confusion from such an array of multiple labels, it is appropriate to begin this thesis with a working definition of work and home. Therefore, work is defined as instrumental activity intended to provide goods and services to support life (Piotrkowski, Rapoport & Rapoport, 1987). Such a definition does not define work as a physical location, particularly with the advent of advanced communications technology. Work signifies membership in a market or organisation that gives the worker rewards in exchange for his/her contribution. Like work, home (or family) implies membership in a social organisation to which the person contributes (Zedeck, 1992). However, such contributions are not intended to gain extrinsic rewards, but rather are intended to promote the well-being and stability of family and home life (Edwards, 1998). Interestingly, Rothhausen (1999) has presented an exhaustive analysis of how the concept of “family” has been operationalised by W/O psychologists and other work-focused researchers and offers five different models. In the absence of an agreed definition she suggests that a “realistic definition of family would include all others who meet certain needs or functions formerly thought to be met by the family; this is a functional or effective, rather than a ‘traditional’ or legal definition of family” (1999: 820). Ideally, one should try to define one’s concepts carefully, but the interesting issue here is that it is partly the blurring of the distinctions and the borders



between them that has stimulated interest in the topic. All that said, a clear definition of the concepts to be studied is best way to proceed.

Work-Home interference (WHI) and Home-Work interference (HWI) is 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). WHI and HWI have been well established as variables that influence worker health. The basic argument is that work demands affect family life through the creation of WHI, with consequent negative effects on social role quality at home. Conversely, home or family demands are thought to interfere with work, also creating HWI. Such types of interference can produce difficulties for employees and their families, for employers, and for society as a whole. Such interference is further compounded by the contemporary changes in the way in which people work, resulting in increasingly blurred boundaries between work and non-work (Montgomery, Panagopoulou, Peeters & Schaufeli, in press; Nippert-Eng, 1996). A growing number of people work overtime, work systematically one or more days at their home address (e.g., telework), and work often during hours beyond 'nine-to-five' (e.g., shift work, weekend work) (Merllié & Paoli, 2000; Paoli, 1997). Similarly, personal services have become a more frequent feature of the workplace (e.g., company sponsored hairdressing facilities, company gyms, shopping services). Additionally, working hours are also spent on personal activities (e.g., personal phone calls and e-mails). The modern dilemma of multiple obligations means that the incidence of work impacting on home (and vice versa) is more likely. Thus, the widespread experience of WHI and HWI creates multiple problems that affect different stakeholders in different ways.

The importance of the research area is highlighted by the fact that a large body of literature has identified WHI as being associated with a range of work-related (e.g., intention to turnover), nonwork related (e.g., marital satisfaction) and stress-related (e.g., burnout) adverse outcomes (see Allen, Herst, Bruck & Sutton, 2000 for discussion). As yet, research has not adequately identified the processes through which job and home characteristics intrude across the work/home nexus. Without a better understanding of the processes that link work and home life, it is difficult to identify effective strategies for helping workers balance the two. Workplace policies that are implemented can only be effective to the extent that the assumptions of how they come to affect workers are indeed accurate. Therefore, an understanding of the



processes linking work and home life is necessary to adequately evaluate the effectiveness of work place practices.

1.4 Measurement of Work-Home and Home-Work Interference

WHI and HWI are predominately measured by self-report measures (e.g., ‘How often do you find it difficult to fulfill your domestic obligations because you are constantly thinking about your work?’). At a general level, measures assess either the positive and/or negative impact of work on home, and the positive and/or negative impact of home on work. Most reviews of the area (e.g., Allen et al, 2000; Geurts & Demeroti, 2003) indicate that the phenomena has been tended to be measured from the negative of interference framework.

At a more refined level, some researchers have attempted to sub-divide these general categories into different forms of WHI/HWI. For example, Greenhaus and Beutell (1985) have distinguished between three different types: (1) time-based conflict, referring to time-based pressures (e.g., ‘The amount of time my job takes up makes it difficult to fulfill family responsibilities’); (2) strain-based conflict, referring to strain created by the participation in multiple domains (e.g., ‘My work makes it difficult for me to feel relaxed at home’); (3) behavior-based conflict, referring to incompatibility between patterns of role behavior transferring from one domain to another (e.g., ‘My job made me behave in ways that are unacceptable at home’). Such an approach has been hampered by the difficulties in the operationalization of the behaviour-based component, where there is little empirical evidence for the existence of this form of conflict (Geurts & Demerouti, 2003). Additionally, Aryee (1992, 1993) has conceptualized WHI in terms of interference between different roles (i.e., job-parent, job-spouse) and Kirchmeyer (1992, 1993) has conceptualized HWI in terms of how specific non-work roles (i.e., parenting role, community work role, recreation) impact on work. The aforementioned research represents attempts to more specifically define WHI/HWI. While such attempts may bring richer insights into the phenomenon, the most recent review of the area (Geurts & Demerouti, 2003) indicates that the accumulated evidence (so far) suggests that we can only discuss the dichotomy between WHI/HWI reliably. A ‘state-of-the-art’ assessment at this point recommends that we should view WHI and HWI as two distinct aspects of the work/home interaction (that are at best only moderately correlated). Therefore, the most conservative (reliable) approach is to measure the phenomenon from the



perspective of distinguishing between WHI/HWI and between positive and negative. With this in mind, the present thesis will operationalise the phenomena according to four general taxonomic categories included in the Survey Work-Home Interference of Nijmegen (SWING: Wagena & Geurts, 2000): (1) negative interference from work interfering to home (negative WHI); (2) negative interference from home to work (negative HWI); (3) positive interference/enhancement from work to home (positive WHI); (4) positive interference/enhancement from home to work (positive HWI). An exhaustive list of the items to be used in the present research can be found in Appendix A.

1.5 Theoretical Background

Zedeck and Mosier (1990) and more recently O'Driscoll (1996) note that there are typically five main models used to explain the relationship between work and life outside of work. (1) The *segmentation* (or segregation) model hypothesizes that work and home are two distinct domains of life that are lived quite separately and have no influence on each other (Dubin, 1956; Dubin & Champoux, 1977). This appears to be offered as a theoretical possibility rather than a model with empirical support (Guest, 2002). This approach has been applied more frequently to blue-collar workers, who have more often unsatisfying and uninvolved jobs (Lambert, 1990). (2) In contrast, a *spillover* model hypothesizes that one world can influence the other in either a positive or negative way. For example, an individual may bring negative (or positive) feelings from work to home (and vice-versa). (3) The third model is the *compensation* model, which proposes that what may be lacking in one sphere, in terms of demands or satisfaction, can be made up in the other. For example, work may be routine and undemanding but this can be compensated for by a major role in local community activities outside of work. On the whole, the spillover model has received qualified support (e.g., Geurts, Rutte & Peeters, 1999; Kabanoff & O'Brien, 1980; Kinnunen & Mauno, 1998), but the compensatory model has received little or none. (4) A fourth model is an *instrumental* model whereby activities in one sphere facilitate success in the other. The traditional example is the instrumental worker who seeks to maximize earnings, even at the price of undertaking a routine job and long work hours, to allow for the purchase of a home. These four models are essentially descriptive models, and to be of value they need to incorporate an analysis of their causes and consequences (Guest, 2002). (5) The final and fifth model is a *conflict* model, which proposes that

with high levels of demands in all spheres of life, some difficult and conflicting choices have to be made and significant overload may occur. In line with spillover and conflict models, role-theory has provided a useful conceptual framework to understand how men and women attempt to balance their many roles (Kahn, Wolfe, Quinn, Snoek & Rosenthal, 1965). Role or interrole conflict is the simultaneous occurrence of two (or more) sets of role pressures, such that compliance with one role makes it very difficult to comply with other. The contemporary literature recognises two forms of interrole conflict: work interference with home/family and home/family interference with work. The distinction between these two forms of conflict has been conceptually (e.g., Greenhaus & Beutell, 1985) and empirically (e.g., Frone, Russell & Cooper, 1992b; Netemeyer, Boles & McNurrian, 1996) supported.

The predominance of the conflict and spillover models has prompted researchers to think in terms of role strain, which has in turn prompted competing hypotheses about the way energy is distributed via roles and domains. The role strain perspective represents the *scarcity* perspective in relation to the notion that people have limited amounts of time and energy, and investing energy in one domain means less for another domain (or role) (see Marks, 1977 for a discussion). In opposition to the role strain hypothesis, a parallel body of theory suggests that participation in multiple roles might provide a greater number of opportunities and resources to the individual that can be used to promote growth and better functioning (Marks & MacDermid, 1996). Empirical evidence for such a view comes from studies which show that employed married mothers experience higher levels of happiness and physical health (minimizing for confounding due to selection effects) compared with unemployed married mothers (Waldron, Weiss, & Hughes, 1998). A good example of such role expansion can be found in Grzywacz and Marks (2000), who found evidence that positive spillover facilitated development (e.g., decision latitude, family support).

On the basis of role theory and consistent with Kahn et al., (1965), this thesis will evaluate two types of interrole conflict: Work-Home Interference (WHI) and Home-Work Interference (HWI). Furthermore, on the basis of of scarcity and expansion theories, this thesis will also distinguish between positive and negative forms of WHI and HWI. This four dimensions distinction to can also be found in recent empirical research of Demerouti, Geurts & Kompier (2001), Grzywacz & Marks (2000) and Wagena & Geurts, (2000). Accordingly, WHI can be either



negative or positive spillover, and HWI can also be either negative or positive spillover. This view posits WHI/HWI as the result of the interaction between both domains, whereby one's functioning in one domain is influenced by one's functioning in another domain (Geurts & Demerouti, 2003).

1.6 Work-Home /Home-Work Interference: Whose problem is it?

Parasuraman and Greenhaus (1999) prompt us to consider the question of who 'owns' the problem of WHI and HWI. Such a question is not unimportant when one considers that beliefs about who 'owns' the problem are likely to influence one's attributions or beliefs about who should bear responsibility for helping individuals manage it. A good place to start is an examination of the myths that surround the incidence of WHI/HWI. Firstly, the line of reasoning that suggests that working is a matter of individual choice is clearly inconsistent with the reality that most people (including women) work out of economic necessity (Powell, 1999). Secondly, the idea that the problem is specifically related to women with children is inconsistent with the accumulated data that strongly suggests that men and women (with and without children), from different occupational positions experience both WHI and HWI to an equal degree (Galinsky, Bond & Friedman, 1993). Indeed, Frone, Russell and Barnes (1996) examining WHI and HWI among two random samples of employed parents found no gender differences in the relation between WHI/HWI and health related outcomes. While the authors didn't report the differences between WHI/HWI according to gender, finer-grained analysis of the WHI/HWI x gender relationship did indicate that interactions did not differ across levels of family status or age of youngest child variables. Consistent with such research, O'Neill and Greenberger (1994) found little difference between men and women in the psychological importance of both work roles and parental roles. Furthermore, while women bear a disproportionate "dual burden" of paid and unpaid work, evidence does suggest that husband's proportion of household work (especially husbands with wives in full-time employment) is continually rising (Gershuny, Godwin & Jones, 1994). Such a process of "lagged adaptation" suggests men and women are nowadays renegotiating their previous assumptions about the division of household labour.

Thirdly, there is an assumption that WHI/HWI is less important in societies that have a large amount of part-time workers (such as the Netherlands)¹. Such an idea rests on the notion that WHI/HWI is primarily associated with long work hours. However, the belief that part-time work is associated with beneficial effects receives scant empirical support from studies of physical and mental health outcomes (Herold & Waldron, 1985; Wethington & Kessler, 1989; Verbrugge, 1989). Indeed, one might predict that part-time status would be most beneficial among workers under the most acute work/home stress, but Herold and Waldron (1985) in a sample of employed married mothers of preschoolers and mothers with three or more children concluded that “no advantage for part-time workers relative to full-time workers was observed” (p. 411). Evaluation of part-time work versus full-time work is made difficult by the wide variation in the amount of part-time hours worked, and by the anecdotal evidence that the number of hours for which part-time workers are paid seriously underestimates the absolute number of hours they spend on the job (Barnett, 1998). In addition, it is important to control for covariates (e.g., sex, age and marital status) and investigate the nature of non-work activities engaged in (e.g., increased home burden). Finally, selection effects may be an important issue, with people who select to work part-time differing with people who choose to work full-time in ways that relate systematically to their preferences and to their ability to manage work and home demands (Barnett, 1998). In conclusion, we have no definite answers about the relationship between part-time work per se and WHI/HWI, and assumptions that part-time workers will experience such interference at lower levels is unfounded. In effect, the conditions in which part-time work is engaged in will most probably influence the levels of WHI/HWI experienced, not the fact of being part-time per se.

Looking at both North American and European perspective, the decline in the proportion of families with full-time homemakers and the increasing proportion of workers with responsibilities for elder care indicates a heightened potential for both men *and* women to experience WHI/HWI. So the problem of WHI and HWI is a potential issue for anybody who has to consistently integrate a work role (paid and unpaid) with family/home responsibilities. Such a definition presents us with a

¹ The Social and Cultural Report (2000) indicates that the Netherlands has the highest percentage of part-time workers in the European Union.



considerable amount of people from the working population, in opposition to the idea that this problem is a ‘local’ or ‘mommy-track’ problem. Indeed, the recent study by Frone (2000), among a representative national sample of 2,700 employed adults, found that employees who reported experiencing WHI/HWI often were 2-30 times more likely (depending on the type) than were employees who reported no WHI/HWI to experience a clinically significant health problem. This study adds empirical evidence to already existing anecdotal evidence (Shellenbarger, 1999; Jackson, 2000) suggesting that WHI/HWI is societal problem. Therefore, WHI/HWI and its associated negative consequences is potentially a problem for all employees.

1.7 Empirical Overview

1.7.1 Prevalence of WHI and HWI

A review of the WHI and HWI literature reveals that WHI has been consistently more prevalent than HWI (e.g., Bond, Galinsky & Swanberg, 1998; Burke & Greenglass, 1999; Demerouti, et al., 2001; Eagle, Icenogle, Maes, & Miles, 1998; Frone, Russell & Cooper, 1992a; Kinnunen & Mauno, 1998; Leiter & Durup, 1996). Indeed, Frone et al. (1992) found that WHI was reported three times more frequently than HWI by both male and female employed adults with a spouse and/or with children. Bond et al. (1998) reported similar results for a nationally representative sample of the American working population, with an even greater divergence in the prevalence.

Although, it seems that the impact of HWI is more often felt in terms of positive spillover as opposed to negative. Demerouti, et al., (2001) found that of all the dimensions of work-home interaction, positive influence of the home situation on one’s functioning at work (HWI-positive) was the most prevalent among 715 employees from the Dutch Postal Services (see also Wagena & Geurts, 2000). Using an American sample of over 2,000 employees, Grywacz and Marks (2000) showed that positive spillover from family to work was as equally prevalent as negative spillover from work to family among both male and female workers. So, in conclusion while the overall evidence suggests that WHI is more prevalent than HWI, recent research suggests that HWI may become more significant when we view it from the positive perspective.



1.7.2 Antecedents of WHI and HWI

A review of the literature on the antecedents of WHI and HWI reveals a great deal of variety in the variables studied. In addition, and according to the knowledge of the author, no published systematic quantitative review of the antecedents of WHI and HWI is in existence. Therefore, it was decided to examine the literature in a systematic fashion and report a quantitative summary of the studies identified and reported. Relevant articles were identified through manual and computer searches. Computerized searches were conducted through the PsycLIT databases using the key words “work and home/family conflict/interference”. In addition a manual search of articles published between 1990 and 2001 in the following journals; *Journal of Applied Psychology*, *Journal of Organizational and Occupational Psychology*; *Work & Stress*; *Journal of Occupational Health Psychology*; *Journal of Organizational Behavior*; *Journal of Vocational Behavior* and *Journal of Marriage & the Family*. Consistent with the recent meta-analysis of Allen et al. (2000), the criteria for inclusion in the review were three-fold. Firstly, both WHI and HWI had to be a quantitatively measured variable in the study. Secondly, the study had to measure the relationship between WHI/HWI and one or more variables that could theoretically considered to be antecedents of WHI and HWI. Thirdly, only studies that included a zero-order bivariate correlation between WHI/HWI and the antecedent variable/s were included.



Table 1.1 Summary of antecedents for WHI & HWI

WHI Antecedents	k	n	r	SD _r	r _w	Range
Job Involvement	6	1803	.18	.11	.16	.03 - .28
Workload	4	987	.57	.07	.55*	.47 - .64
Work Schedule	6	1510	.20	.09	.17*	.11 - .36
Job Stress	2	837	.48	.26	.31	.31 - .68
Commitment	2	515	.28	.04	.31	.26 - .31
Supervisor Support	4	1426	.20	.17	.18	-.09 - -.44
Frequency of Stress	1	113	.24	na	na	na
Co-worker Support	1	372	-.08	na	na	na
Career Priority	1	399	.10	na	na	na
Time Commitment to Work	1	111	.51	na	na	na
Organisational Climate	1	779	.37	na	na	na
Managerial Role	1	779	.54	na	na	na
Feeling valued by partner	1	786	-.12	na	na	na
HWI Antecedents	k	n	r	SD _r	r _w	Range
Family Involvement	7	2021	.19	.19	.12	.05 - .47
Parental Stress	1	206	.29	na	na	na
Family Stress	1	631	.29	na	na	na
Spouse social support	1	372	-.14	na	na	na
Parenting Overload	1	372	.42	na	na	na
Family Info/emotional support	1	163	.35	na	na	na
Domestic work	1	779	.17	na	na	na
Home Stress	1	779	.45	na	na	na
Time Commitment to Family	1	111	-.06	na	na	na

Note. *Z score > 1.96, k = number of studies, n = total sample, r = unweighted correlation coefficient, SD_r = standard deviation of correlation coefficients, r_w = weighted correlation coefficient, na = not applicable

Once located, articles were categorized and multiple studies were compared using the effect size calculations according to the guidelines of Hunter and Schmidt (1990)². An examination of published research (from 1990 to 2001, see Appendix B and C) that specifically conceptualized variables as antecedents of either WHI or HWI revealed a diverse array of variables. Table 1.1 presents a summary of the quantitative review of the antecedents for WHI and HWI.

Firstly, WHI will be examined. WHI has been associated with job involvement (Adams, King & King, 1996; Eagle, Icenogle, Maes & Miles, 1998; Fox & Dwyer, 1999; Frone, Russell & Cooper, 1992b; Hammer, Allen & Grigsby, 1997; Parasuraman, Purohit, Godshalk & Beutell, 1996), increased workload (Frone, Yardely & Markell, 1997; Geurts et al., 1999; Parasuraman, Purohit, Godshalk & Beutell, 1996; Wallace, 1999), work schedule inflexibility (Aryee, 1992, 1993; Eagle et al, 1998; Geurts, et al., 1999; Parasuraman, et al., 1996; Thomas & Ganster, 1995), increased job stress (Bernas & Major, 2000; Frone, et al., 1997), low commitment (Casper, Martin, Buffardi & Erdwing, 2002; Frone, Yardely & Markell, 1997), frequency of stress (Fox & Dwyer, 1999), lack of supervisor support (Fox & Dwyer, 1999; Frone, Yardely & Markell, 1997; Geurts et al, 1999; Senecal, Vallerand & Guay, 2001), co-worker support (Frone, Yardely & Markell, 1997), career priority (Hammer et al., 1997), time commitment to work (Parasuraman, et al., 1996), organisational climate (Swanson et al, 1998), managerial role (Swanson, Power & Simpson, 1998), and not feeling valued by one's partner (Senecal, Vallerand & Guay, 2001). Analyses of some of the more frequently studied antecedents (i.e., job involvement, work schedule inflexibility, supervisor support and workload) indicate mixed results (see Table 1.1). For instance, with regard to job involvement, both Fox and Dwyer (1999) and Frone et al, (1992b) did not find a significant correlation with WHI, and the overall effect size was non-significant, suggesting that the level to which people are involved in their jobs is not consistently associated with increased WHI. However, the most consistent antecedent was workload, with a high effect size across all studies cited (range = .47 to .64). Therefore, the feeling that one is overburdened with work is consistently associated with WHI. With regard to schedule

² Studies with multiple samples were analyzed according to guidelines described in Allen et al. (2000).



flexibility, the effect size was low but significant, but both Aryee (1992, 1993) and Thomas and Ganster (1995) failed to find significant associations for work schedule flexibility suggesting that the overall pattern was mixed. The flexibility of one's schedule is not consistently related to WHI. Supervisor support did produce significant associations in all studies cited, but overall the observed effect size was non-significant. Therefore, support from a supervisor was not consistently related to WHI. Such a surprising result can be explained by closer scrutiny to the studies involved. For example, within the category of supervisor support, Senecal et al. (2001) accounted for the biggest sample size (55% of the total N) and the lowest correlation coefficient ($r = -.09, p < .05$). More detailed analysis of this study indicates that 63% of the sample was professional working women (with at least one child between the ages of 1 and 18 years), and it is reasonable to speculate that the majority of this sample was highly motivated individuals for whom supervisor support was less important. Indeed, Senecal et al. (2001) did find that whereas women experienced less support from their employer (compared to males), they reported higher levels of self-determined motivation towards work than did males. Moreover, in this study no sex differences were found in reported levels of WHI, suggesting that less support was not associated with higher WHI.

The quantitative review shows quite clearly that there were only four variables (i.e., job involvement, workload, work schedule and supervisor support) that provided us with the multiple studies (> 2 studies). It is only with multiple studies that reliable conclusions can be made regarding the overall associations between antecedents and WHI/HWI. Of the four, only workload emerged as the consistently related antecedent. Such consistency is reflective of the way in which too much work can spillover into our home domain. The small amount of studies identified precludes us from reaching hugely substantive conclusion regarding the different types of antecedents of WHI. Studying the antecedents in a more systematic way represents one way to address the call to provide a more sound theoretical rationale to the study of WHI (Lambert, 1990).

While the calculation of an effect size provides a quantitative estimate of multiple studies, this shouldn't preclude the need to also engage in a more qualitative analysis of the collected literature (see Sohn, 1997 for a discussion). A review of the studies measuring job involvement is suggestive of a selection effect with most significant results among the studies involving people who were highly motivated



(individuals attending extra-curricular education and entrepreneurs). Additionally, analysis of the Hammer et al. (1997) study was made more complicated by the fact that the researchers had measured both WHI and HWI, but failed to distinguish between them in the analysis. With regard to the category of work schedule flexibility, inconsistent results were found with the two studies focusing on individuals from Asia (Aryee, 1992, 1993). Comparing across studies that probably have different cultural norms regarding work and work flexibility is problematic at best. Finally, a review of the studies concerning supervisor support suggests that the study by Geurts et al. (1999) may be the ‘outlier’ and the highly significant result may reflect the fact that medical residents are continually evaluated and judged by their superiors (a fact reported by Geurts et al., 1999, in their study). The implication here is that this study may be qualitatively different from the other studies in this category, in that supervisor support was strongly tied up with supervisor evaluation suggesting that these individuals are ‘abnormally’ attuned to their supervisors for this particular juncture of their careers.

Not surprisingly antecedents of HWI were less well studied, but examination of the research did reveal that HWI was studied with the following variables as antecedents (see Table 1.1): family involvement (Adams et al, 1996; Eagle et al, 1998, Frone et al, 1992; Hammer et al, 1997; Kirchmeyer, 1992, 1993; Parasuraman et al, 1996), parental stress (Bernas & Major, 2000), family stress (Frone et al, 1992b), spouse social support (Frone, Yardley & Markel, 1997), parenting overload (Frone, Yardley & Markel, 1997), information/emotional support (Adams et al., 1996), domestic work (Swanson et al, 1998), home stress (Swanson et al, 1998) and time commitment to family (Parasuraman et al., 1996). Analysis of the antecedent variables for HWI revealed mixed results. Overall, the effect size for family involvement was nonsignificant, suggesting that feelings of involvement with one’s family were not related to HWI. Within these set of studies, the two studies by Kirchmeyer (1992, 1993) are noteworthy in that they focused exclusively on the perceptions of HWI. The more fine grained analysis by Kirchmeyer (1992, 1993) in separating and studying different aspects of our non-work life (parenting, community work and recreation) suggests that looking at a broader picture of the home domain provides evidence that it can impact upon work. Traditionally, the home domain is one that has failed to receive adequate recognition (e.g., Kanter, 1977). Although only single studies, significant associations were found for information/emotional family

support, suggesting that support may play a direct role in reducing the experience of HWI. Indeed, the significant correlations in the Adams et al. (1996) study may be reflective of the fact that the sample were individuals attending extra-curricular education, and as such support from the family could be crucial with extra demands in addition to one's work. As with our review of WHI, the mixed results suggest that we need to approach the measurement of antecedents in a more systematic fashion. Moreover, there is a need to readdress the imbalance in the way in which the work side of the equation has received most attention. Such a need is emphasized by the study of Frone (2000), among a representative national sample of employed adults, who found that the odds of psychiatric disorders was significantly more likely for people experiencing HWI (compared with WHI). Frone (2000) speculates that attributions of responsibility regarding WHI are more likely to be made externally to the demands of their jobs, whereas attributions of responsibility regarding HWI are probably more likely to be made internally, and may be viewed as an inability to manage one's life.

In conclusion, there is a paucity of theorizing and empirical studies concerning the antecedents of both WHI and HWI. Overall, the relatively small amount of studies makes it difficult to be too conclusive. However, such a literature review does suggest the following things: (1) only a small amount of studies were located ($n = 32$) within the twelve years covered by the review, (2) many different antecedents of WHI and HWI are being studied, suggesting that they should be studied in a more systematic fashion, (3) involvement in both work and family was not consistently related to the experience of WHI and HWI, respectively and (4) workload is the most consistent antecedent of WHI.

1.7.3 Structural variables

The following section will review the most commonly studied structural variables: age, marital status, and family structure.

The effect of age on WHI/HWI has not been systematically studied (Geurts & Demerouti, 2003), meaning that it has rarely been the focus of the study. However, the variable age has been consistently included in studies of WHI and therefore we can deduce conclusions on its association with WHI/HWI by reference to the correlation table reported in each study. The conclusion that we can draw from all the studies that we reviewed is rather mixed: on the one hand, some evidence has been

found to support a link between age and WHI/HWI (Burke & Greenglass, 1999; Frone, 2000; Frone, Russell & Barnes, 2000; Kirchmeyer, 1993; Swanson et al., 1998). For example, Grzywacz and Marks (2000) found that, after controlling for work and home factors, younger men reported higher WHI-negative and less HWI-positive than older men, whereas younger women reported more WHI-positive and less HWI-negative than older women. Conversely, a considerable amount of evidence has found age not to be related to any type of negative interaction between both domains (Bernas & Major, 2000; Bruck, Allen & Spector, 2002; Frone, Russell & Cooper, 1997; Kinnunen & Mauno, 1998; Markel & Frone, 1998; Marshall & Barnett, 1994; Milkie & Peltola, 1999; Stoeva, Chiu & Greenhaus, 2002). Unfortunately, regardless of whether an effect was found or not, no substantive theory exists with regard to the relation between age and WHI/HWI.

The impact of whether one has a working partner (i.e., a partner who is gainfully employed) has not been clearly investigated with the WHI/HWI literature. Geurts et al. (1999) found not relationship between being in a dual-career couple and WHI, but did find a positive relationship between having a partner who works overtime and WHI. Similarly, Kinnunen and Mauno (1998) found no relationship between having a working spouse with either WHI or HWI. Rau and Hyland (2002) did find an association between having a working spouse and WHI among a sample of part-time MBA students. However, they treated this variable as a control variable and provided no discussion of what such an association implied. While there is accumulated data on the strategies that dual-earner couples use to deal with the demands and responsibilities inherent in both partners working while trying to fulfill family responsibilities (e.g., Barnett & Rivers, 1996; Becker & Moen, 1999), little research compares dual-earner with “single bread-winner” families in regard to WHI and HWI. Overall, there is scant research or theorizing with regard to the effect of being part of a dual-earner couple (or not) on WHI/HWI, as is evidenced by its non-discussion in the recent review of the area by Geurts & Demerouti (2003).

A more consistently studied variable relates to the number of children one has and its effect on WHI. The number of children at home has been positively related to both WHI and HWI meaning that the demands of a family can contribute to the domains of work and home interfering (Grandey & Cropanzano, 1999; Kinnunen & Manuo, 1998; Netemeyer et al., 1996). Carlson (1999) found that the number of children one had was positively related to three different types of WHI (strain-based,



time-based and behaviour-based). Conversely, Stephens and Sommer (1996), using the same tri-partite classification of WHI, found no relationship between the two variables. Working women with young children (< 12 years) experience more WHI and HWI, compared to both working women with older children and working men (e.g., Crouter, 1984; Duxbury et al., 1994). However, it is important to recognise that some studies have also found no relationship (Berns & Major, 2000; Bruck, Allen & Spector, 2002; Frone, Russell & Barnes, 1996; Frone & Yardely, 1996; Kirchmeyer & Cohen, 1999). So, the evidence with regard to structural variables is quite mixed. A more fine-grained analysis of the effects of these variables is hampered by the fact that most studies treat them as control variables and do not provide a more comprehensive evaluation of why they may be influential.

Overall, the mixed results suggest that the existence of children per se is not directly related to WHI/HWI and it may be speculated that having children may work in two opposite ways. Specifically, having children may increase WHI/HWI by increasing demands on parent/s time or it may actually reduce WHI by prompting parent/s to be more organized within their lives.

1.7.4 Consequences

The outcomes of WHI can be categorized within two areas; individual and organizational. These outcomes can be further sub-divided into positive and negative outcomes. Research in the WHI/HWI field needs to specify the relationships between work and home, and different outcomes. The meta-analysis of Allen, Herst, Bruck and Sutton (2000) presents the most comprehensive review of the consequences associated with WHI. Conceptually, Allen et al. (2000) divided the consequences into three general areas: work-related outcomes, nonwork-related outcomes, and stress-related outcomes. In the area of work-related outcomes, job satisfaction (in agreement with Kossek & Ozeki, 1988) and organizational commitment decreases as WHI increases indicating that the experience of such interference from work to home can feedback to how we experience work. The results for job satisfaction were mixed and may suggest that satisfaction may vary according to specific job aspects (e.g., supervision or benefits). Increased WHI was related to turnover, albeit not on studies which looked at actual turnover. No significant associations were found between WHI and career satisfaction and absenteeism.

In the area of non-work related outcomes, WHI was most strongly related to life satisfaction. Interestingly, the two studies with the lowest correlations for life satisfaction were conducted in the early 1980s, which may suggest that the fact that WHI has become more important in recent times. Results with regard to marital satisfaction were mixed, and it may be that marital dissatisfaction may prompt individuals to engage in more work and increase WHI, and so on. Allen et al. (2000) call for more diverse measures in the investigation of the non-work domain.

In the area of stress-related outcomes, the meta-analysis revealed that the strongest relationship was between WHI and burnout indicating that such interference has important organizational consequences. Indeed, one could reasonably speculate that the experience of burnout exacerbates feelings of WHI. More longitudinal research was urged by Allen et al., especially given the work of Frone, Russell and Cooper (1997) who found the effects of WHI on depression disappeared over time. The meta-analysis, although comprehensive, concerned itself primarily with WHI. A fuller picture of the relationship between work and home also calls for the measurement of HWI.

In order to determine whether certain outcomes are more debilitating than others, it is important to identify specific effects on specific outcomes. The more diverse the outcome measures, the better able the research is to capture the full range of effects that different processes and their resulting patterns of work/home intersection have on workers and their families (Lambert, 1990). Therefore, the present thesis will examine positive and negative outcomes.

The antecedents and consequences of WHI/HWI have been comprehensively reviewed thus far. The major conclusions of this review indicate that the antecedents have been reviewed in an ad-hoc manner, and the outcomes have been studied from an almost exclusively negative framework. Therefore, the first question of the present thesis will examine the antecedents and outcomes in a more exhaustive manner than previous research.

Research Question One: What are the antecedents and outcomes of WHI/HWI?



1.8 Work-Home /Home-Work Interference as a mediator

Psychologists have long recognized the importance of mediating variables. Woodworth's (1928) S-O-R model, which recognized that an active organism interferes between stimulus and response, is perhaps the most generic formulation of the mediation hypothesis. The central idea in this model is that various transformation processes internal to the organism mediate the effects of stimuli on behavior. Indeed, exploring mediating variables has been the core business of social psychology since the decline of behaviourism (Stroebe, personal communication). However, confusion and misunderstanding with regard to the measurement and conceptualization of mediators in the social sciences literature has been well noted (Baron & Kenny, 1986; Herting, 2002; Holmbeck, 1997). In general, a given variable is said to function as a mediator to the extent that it accounts for the relationship between the predictor and criterion variables.

To clarify the meaning of mediation, we introduce a diagram (see Figure 1.1). A variable functions as mediator when its inclusion in the analysis (paths a + b) result in a significant reduction in the relationship between the independent and outcome variable (c). According to Baron and Kenny (1986), a variable functions as a mediator when it meets the following conditions: (a) variations in levels of the independent variable significantly account for variations in the presumed mediator (i.e., path a), (b) variations in the mediator significantly account for variations in the dependent variable (i.e., path b), and (c) when paths a and b are controlled, a previously significant relation between the independent and dependent variables is no longer significant, with the strongest demonstration of mediation occurring when path c is zero (i.e., full mediation). When path c is reduced to zero, we may have strong evidence for a single dominant mediator. If the residual path of c is not zero, this indicates the operation of multiple mediating factors (i.e., partial mediation).

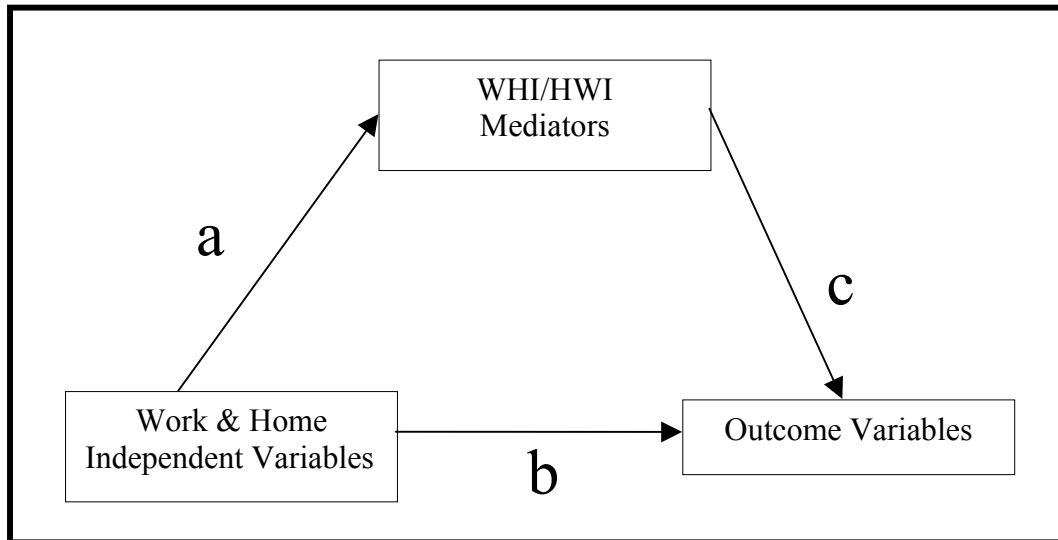


Figure 1.1 Mediation Model

In addition to this, Baron and Kenny (1986) recommend the use of Sobel's (1982) equation for the standard error to test the significance of the indirect effect. However, Sobel (1988) cautions us to use this formula when the sample size is greater than one hundred. Indeed, the use of Sobel's formula has been superseded somewhat by the recommendations of Holmbeck (1997) who advocates the use of structural equation modeling (SEM) to ascertain mediated effects. The use of SEM vastly simplifies the modeling of mediation-allowing one to incorporate measurement error-and provides modeling of non-recursive structures (Brown, 1997). At a practical level, the problem of full versus partial mediating effects can be tackled by following the recommendations of Brown (1997) and MacKinnon and Dwyer (1993), and calculate the ratio of the indirect effect to the direct one. The conclusion to the foregoing is that when partial mediation is present, the ratio of the indirect to the direct effect is a reliable indicator.

An additional consideration in using SEM to assess mediation is the important distinction between indirect and mediated effects (Holmbeck, 1997). Assuming a big enough sample size, SEM allows us to compare different models and distinguish between indirect effects and mediated effects. In essence, it is possible to find a SEM relationship from predictor to mediator, from mediator to criterion and from predictor

to criterion (even without a direct relationship between predictor and criterion)³. So, although there is evidence for an indirect effect between predictor and criterion, the mediator cannot account for the relationship between predictor and criterion. Therefore, the results fit the criteria for an indirect effect, but not a mediated one. Indeed, Holmbeck (1997) points out that it is not uncommon for “good” statistical textbooks (e.g., Tabachnick & Fidell, 1996) to use “mediational pathway” and “indirect pathway” interchangeably. The case for a SEM approach has been made even stronger by a recent paper (Herting, 2002), which directly challenges the Baron and Kenny (1986) approach on the grounds that it does a poor job in accounting for the correlated error between the mediator and the outcome. Herting (2002) presents a convincing case that the Baron & Kenny (1986) approach can lead to the rejection of mediation when it is in fact present.

The role of WHI (and consequently HWI) as a mediator has been *suggested* by various studies (Frone et al., 1992; Bakker & Geurts, 2002; Geurts, Rutte & Peeters, 1999; Kinnunen & Mauno, 1998; Parasuraman, Purohit, Godschalk & Beutell 1996; Stephens, Franks, & Atienza, 1997). However, a review of the literature indicates that studies have not done an adequate job in either assessing mediation or distinguishing between full and partial mediation (see Holmbeck, 1997, for a review of assessing mediation). For example, Geurts et al. claim that WHI “plays a perfect mediating role”, (1999: 1144), but an adequate effort was not made to distinguish between partial and full mediation. Kinnunen and Mauno (1998) and Parasuraman et al. (1996) don’t actually assess the mediating role of WHI, except to report that WHI was related to various antecedents and outcomes. Most recently, research by Clark (2002) examining the mediational role of sense of community between personal/work factors and WHI is particularly noteworthy in that Clark (2002) claims to have found support for mediation but doesn’t present any systematic procedure beyond claiming that “the overall good fit of the model to the data...and the significance of the paths between the variables lend support to these hypotheses.” (Clark, 2002:104). Clark seems particularly at fault when one examines the correlation table and finds non-significant correlations between the hypothesized mediational paths. So, social psychologists

³ Holmbeck (1997) presents an analysis of this via the research of Capaldi, Crosby and Clark (1996).

have been interested in mediation for quite some time, but the need to actively consider the associated conceptual and statistical problems has not kept pace with that interest.

Theoretically, the definition of WHI/HWI implies mediation, as there will be no WHI when there are no demands at work. Conceptually, WHI fits the characterization of a response variable as suggested by Holmbeck (1997). In essence, variables such as WHI cannot exist in isolation. One cannot experience WHI if there are no job demands in the first place. It is important to distinguish between full and partial mediation, as there are strong grounds for believing that WHI may only play a partially mediating role. Firstly, given the fact that some demands are contextual (e.g., dealing with colleagues/supervisors at the workplace, conducting oneself in a professional manner) it is less likely that all work demands will interfere with home and vice-versa. Secondly, there is accumulating evidence to suggest that job demands have a strong and direct relationship with outcomes such as burnout (see meta-analysis of Lee & Ashforth, 1996). Thirdly, anthropological studies of the way that people separate work and home suggest that some people separate and compartmentalize aspects of their work and home domains (Nippert-Eng, 1996), arranging their lives so that aspects of one domain do not interfere with the other. An innovation of the present thesis will be to distinguish both empirically and theoretically between full and partial mediation effects.

Therefore, the present research will contribute to the literature by examining both full and partial mediational effects. Additionally, such effects will be considered both conceptually and theoretically.

Research Question Two:

Do WHI/HWI play a full or partially mediational role between work and home characteristics/demands and their respective consequences?



1.9 Gender differences

In general, research on gender differences and stress has produced three different views. Firstly, some literature on stress differences between men and women has concluded that males are under greater stress, relative to females, at least partly because of gender role stereotypes for males in western culture which emphasis achievement, competency and competition (Eisler & Slidmore, 1987; Goldberg, 1987). For example, employed men report that they work more hours and encounter more concrete deadlines than do employed women, and the positive association between reported stress and work hours and number of children is stronger for males than for females (Sorenson, Pirie, Folsom et al., 1985). Secondly and alternatively, some researchers have argued the opposite view, and suggest that the stress in lives of women is more intense and persistent than it is in the lives of men (Bernard, 1971; Gove & Tudor, 1973; Netterstrom, Kristensen, Damsgaard, Olsen & Sjol, 1991). Such a view cites the fact that because of gender role stereotypes, women are more likely to feel obliged to be available to meet the demands of the family and home, resulting in a higher workload and less time to attend to their needs compared to men (Barnett & Baruch, 1985; Mortimoer & Sorenson, 1984). A third perspective argues that males and females experience stress at similar levels but in different life domains by virtue of differing social roles (Aneshensel & Pearlin, 1987; Wethington, McLeod & Kessler, 1987).

A recent meta-analysis by Davis, Matthews and Twamley (1999), reviewing 119 studies, found that women reported significantly greater levels of stress in the workplace compared to men. However, the studies failed to control for important differences. For example, men frequently are older, have been on the job longer, and make more money than women, even when they occupy similar positions (McDonald & Korabik, 1991; Murphy, Beaton, Cain & Pike, 1994; Scott, 1992). In another meta-analysis by Martocchio and O'Leary (1989), which examined 15 studies on sex difference in occupational stress as reflected by psychological markers (e.g. emotional strain, depressive symptoms, Type A behavior) and physiological markers (e.g., systolic blood pressure, coronary heart disease) of stress, no differences between men and women were found. Together, the findings across these two meta-analyses indicate that although women experience somewhat more stress in the workplace than do men, the sexes have similar levels of psychological and physiological symptoms



associated with their work environments. The fact that differences emerge for work stress, but not for symptoms argues against the notion that sex differences in work stress are due to women over reporting negative experiences.

In contrast to the evidence regarding general stress differences in men and women, gender-specific hypotheses have been formulated on the basis of gender role expectations. The basic idea consists of the notion that gender role expectation means that work will be more important for men, and family life for women (Pleck, 1977). So, although most men and women report that they value their family more than their work, different gender roles can prescribe different emphasizes for men and women: Work is for men; family responsibility and home maintenance is for women (Gutek, Nakamura & Nieva, 1981). Despite the many changes in gender roles over the last number of years, this idea persists. Furthermore, it is entirely plausible that such gender roles will affect men and women's perceptions of WHI and HWI. However, the empirical evidence consistently shows that no (or hardly any) differences exist between females and males with regard to either WHI or HWI (Burke, 1988; Demerouti et al., 2001, Eagle et al., 1997; Frone et al., 1992; Grzywacz & Marks, 2000; Kinnunen & Mauno, 1998; Kirchmeyer, 1993). Indeed, women often report no more WHI than men, despite the fact that women spend more hours in housework than men (Denmark, Shaw & Cialli, 1985) and sometimes experience the home domain as a 'second shift' (Berk & Berk, 1979; Hochschild & Machung, 1989). Maybe the most conclusive evidence comes from Frone (2000) who, using a representative national (USA) sample of 2,700 employed adults, found that gender didn't moderate the relation between WHI and psychiatric disorders. Thus, there is growing body of evidence to show that WHI is equally deleterious to the health of both male and female employees.

The contemporary approach to the issue of gender and WHI/HWI needs to recognize that the social and economic landscape is changing (Alvesson & Billing, 1997). The traditional family model -the husband as breadwinner and the wife as homemaker- is becoming a vestige of past society (Hall & Hall, 1980; Parasuraman & Greenhaus, 1997; Piotrkowski, Rapoport & Rapoport, 1987). The economic pressures of inflation (Lee & Kanungo, 1984) and the social psychological need to "develop one's self-identity" (Nieva, 1985) are encouraging women to take a more active role outside the home and pursue full-time careers, and to participate in society more generally (Cooper, 1981). The increase in the number of families with working



parents has made the old models of coordinating work and home life inappropriate for the majority of the workforce. Indeed, men are becoming more involved with their families, and their priorities are shifting away from work (Gerson, 1993; Michelson, 1983; Pleck, 1985). Together, such trends are resulting in increased levels of WHI and HWI as both men and women try to balance the conflicting demands of work and home. Therefore, the present thesis will examine gender differences in WHI/HWI, and examine whether reported levels are higher in domains inconsistent with the gender role expectations.

Research Question Three:

Do gender differences exist with regard to WHI/HWI? Do such differences reflect gender-role differences with regard to the domains of work and home?

1.10 Crossover

Crossover is defined as the reaction of individuals to the job stress experienced by those with whom they interact with regularly. At a more specific level, Westman and Etzion (1995) note that while the spillover of experiences from one domain of a person's life to another has been documented extensively, the phenomenon of how stress and strain of one person affect other individuals has been less exhaustively investigated. Theoretical discussions of how work and home are linked have been dominated by reference to models such as segmentation, compensation and spillover (Zedeck, 1992). Westman (2001), in a recent review of the crossover, has argued that the crossover model adds another level of analysis to previous approaches by adding the intra-individual level and the dyad as an additional focus. Additionally, Westman (2001) argues that crossover research should be integrated into role theory (Kahn et al., 1964). According to role theory, work and home are involved in elaborate interchanges across time and situations. As such, this suggests a mechanism whereby family members and home demands are reciprocally connected to the workplace. Thus role episodes (e.g., interference) can influence the focal person, the role senders and the relationship between them.

Few studies of crossover have been studied in the WHI literature (Barnett & Barauch, 1985, Greenhaus, Parasuraman, Rabinowitz & Beutell, 1989; Parasuraman,



Greenhaus & Granrose, 1992; Hammer, Allen & Grigsby, 1997). For example, the study conducted by Greenhaus et al. (1989) indicated that men's WHI (strain-based) was highest when both partners placed higher priority on their own careers. Additionally, the study by Hammer et al. (1997) found that a partners' WHI was a significant predictor of their spouses' level of WHI. The few existing studies seem to indicate a lack of cross-pollination when one considers the similarities between the mechanisms involved in both spillover and crossover. This situation seems the more lamentable when one considers the theoretical problems identified within models of work-home processes. Indeed, models have been criticized as being either atheoretical (Barnett, 1998; Zedeck, 1992) or badly integrated (Lambert, 1990). Westman (2001) suggests that crossover should be theoretically anchored to role theory (Kahn et al., 1964), and as such can provide a new and dynamic way to look at WHI/HWI. Accordingly, the usefulness of role theory is that it underscores the interrelations between the focal person and his/her role senders in the different settings (work/home) where the individual finds his/herself.

Therefore, the present thesis will examine whether WHI and HWI can crossover from an individual to their respective spouse.

*Research Question Four: Can WHI and HWI crossover
from one partner to another?*

1.11 Multiple Methods and Quasi Triangulation

Triangulation is defined by Denzin (1978; 291) as “the combination of methodologies in the study of the same phenomenon”. The triangulation metaphor is taken from navigation and military strategies that use multiple reference or citing points to locate an object's exact position (Jick, 1983). In the behavioral sciences, the notion of triangulation can be traced back to the notion of multiple operationism (Campbell & Fiske, 1959). The between (or across) methods form of triangulation is the most popular. For example, this would involve the use of biomedical and behavioral methods to examine the stress response. Triangulation can have other meanings and uses as well, and can also signify the use of different approaches (e.g.,



qualitative/quantitative, crossover/longitudinal) within the same method (e.g., self-report and interview techniques).

A review of the organizational literature indicates that while triangulation methodology has been highly recommended (Ivancevich & Matteson, 1988), it has been underutilized in organizational research (Handy, 1997). One of the few studies to use triangulation in organizational research was conducted by Paul (1996), who used a 'between-method' approach (i.e., interviews, systematic observation, archival data) in the organizational diagnosis of a pharmacy department in a non-profit hospital. Additionally, between-method approaches have been used successfully in others areas of psychology, such as in the evaluation of widow support groups (Margarita et al., 1993) and the relationship between newspaper readership and crime (O'Connell, Invernizzi & Fuller, 1998). Therefore, enough evidence exists to support the efficacy of a between methods approach.

The present thesis will employ the between-method type, which uses multiple techniques to collect and interpret data. More specifically, the present thesis will use the following methods to investigate the phenomena of interest; quantitative review, Internet methodology, cross-sectional methods, crossover methodology and longitudinal data analysis. The use of triangulation offers stress researchers something more than reliability and convergent validity checks, it can capture a more complete portrayal of the phenomena to be studied (Ivancevich & Matteson, 1988).

Denzin (1978) has distinguished between different types of triangulation; the data, investigator, theory and methodological forms of triangulation. Although these refer to different aspects of research, they all have the same function of "testing" the reliability, validity and generality of findings. The present thesis will use a multi-strategy or quasi triangulation approach consistent with researchers who advocate the use of different research methodologies and different data sources to study a specific phenomena (Layder, 1993; Sheppard, Newstad, DiCavcavo & Ryan, 2001). Thus, the present approach is also consistent with a classic on the issue, Campbell and Fiske (1959), who commented, "when a hypothesis can survive the confrontation of a series of complementary methods of testing, it contains a degree of validity unattainable by one tested within the more constricted framework of a single method". In this sense, the essence of triangulation is to prompt us to view a phenomenon from different angles and in doing so further prompt us to consider the future steps that need to be taken.



Therefore, the final aim of this thesis will be to evaluate the accumulated empirical studies and consider the overall implications of the results.

Research Question Five: What is the best way forward in elucidating the work-home nexus? Where do we go from crossover and longitudinal research designs?

1.12 Outline of the Thesis

Chapter 2 examines the mediational role of WHI/HWI between job/home demands and burnout, using a sample from the Internet. This paper results in two major innovations: (1) it examines the role of WHI as a partial mediator and adds to the debate regarding the conceptualization and measurement of mediation and (2) it develops and introduces a richer set of both job and home demands.

Chapter 3 progresses from chapter 2 by examining a more exhaustive model of WHI/HWI among a sample of Newspaper managers. This research examines both demands and resources of WHI/HWI, in terms of both antecedents and outcomes. This chapter further established the role of WHI as a mediator. This chapter shows the need to examine both the positive and negative aspects of WHI/HWI to get a broader picture of the phenomenon.

Chapter 4 examines the crossover of job stress and WHI/HWI between information technology professionals and their partners. This is an extension of the chapters three and four, which examined WHI/HWI within-individuals, as opposed to between-individuals (via crossover). The aims of this research were two-fold: (1) It evaluates how stressors from one partner can crossover to the strains of another, and (2) It explores the importance of WHI in predicting outcomes, even after controlling for negative affectivity.

Chapter 5 presents a longitudinal analysis of a demands and resources model of WHI. This is a logical extension of chapters 2, 3, and 4 that have examined WHI processes at the cross-sectional level. Longitudinal models were examined among a sample of employees working in the financial industry. Using the theoretical framework of the Job-Demands-Resources (JDR) model (Demerouti et al, 2001), it examines a job resources and job demands model, with burnout and engagement as

the respective outcomes. Causal and reversed causal effects are examined across two points. The role of WHI as a mediator is also explored.

Finally, **Chapter 6** recapitulates the findings of the previous chapters and discusses important theoretical, methodological, and practical issues. Furthermore, it identifies the main limitations of the research presented in the thesis and makes suggestions for future studies in the area of WHI and HWI.

Chapter 2 Work, Home and Burnout: An Internet Based Study⁴

2.1 Abstract

Work and family constitute the dominant life roles for employed adults in contemporary society. Work-home interference (WHI) and home-work interference (HWI) is experienced when pressures from these domains are incompatible. The present study tested a job and home demands model of WHI/HWI using a sample recruited from the Internet (N = 1264). Overall, this research made the following contributions: (1) It expanded upon our knowledge of the nature of the mediational effect of WHI and HWI on the demands-burnout relationship, (2) It offered a more precise specification of job and home demands likely to affect burnout, (3) explored possible gender differences in the network of demands, WHI/HWI, and burnout; and (4) It showed the utility of the internet in data collection. Results and limitations are discussed with reference to how our model could be improved and the potential of the Internet as a tool to collect data.

2.2 Introduction

Work and family constitute the dominant life roles for most employed adults in contemporary society. Changes in family structures, increasing participation by women in the workforce, and technological changes (e.g., mobile phones and portable computers) that enable job tasks to be performed in a variety of locations have blurred the boundaries between the job and home-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) is 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). The importance of this research area is highlighted by the fact that a large body of literature has identified WHI as being associated with reduced job and life satisfaction (see Kossek & Ozeki, 1998, for a discussion) and ill health (Frone, 2000).

⁴ Chapter submitted for publication as: Montgomery, A.J., Peeters, M.C.W., Bakker, A. & Schaufeli, W.B. Work, Home and Burnout: An Internet Based Study.



2.2.1 Empirical and Theoretical Background

WHI research has been dominated by the role strain perspective, which suggest that the responsibilities from both domains compete for limited amounts of time and energy (Greenhaus & Beutell, 1985). While some cross-sectional studies have confirmed the asymmetry of the work-home relationship (Frone, Russell & Cooper, 1992a; Jones & Fletcher, 1993), a recent longitudinal study of employed parents by Frone, Russell and Cooper (1997) has suggested that home-work interference (HWI) can have a significant and differential effect on an individuals health, compared to WHI. Frone et al., (1997) found that while WHI was related to heavy alcohol consumption, HWI was related to elevated levels of depression and poor physical health, thus suggesting that they work in different ways. Therefore, the present study will measure WHI and HWI, and explore the different antecedents and consequences with both forms of interference.

2.2.2 Demands

According to Jones & Fletcher (1996), job demands refer to the degree to which working environments contain stimuli that require some effort. Such additional effort may result in additional cognitive, emotional, and/or behavioural activity. The present study is designed to explore demands in more detail and examine their relationship with WHI.

Until recently, most studies of relationship between job demands and job stress have focused on quantitative demands (e.g. workload). One of the most prominent models in this area, Karasek's (1979) demand-control-support (DCS), model has received critical attention with regard to the possible multifaceted nature of job demands. Different types of job demands have been rarely examined within the framework of the model (with the exception of some examples; De Jonge, Mulder & Nijhuis, 1999; Soderfeldt et al., 1996, 1997). The need to evaluate a range of demands is prompted by the fact that the nature of work is changing. Environmental, political and sociocultural forces have contributed to the restructuring of work of the last half a century (see Cooper, Dewe & O'Driscoll, 2001, for a full discussion). To select one example, new technologies are one major reason for the emergence of new forms of working (Hesketh & Neal, 1999). This all suggests that the nature of working is changing by demanding more mental and emotional effort (rather than physical effort alone). In terms of emotional demands, increasing amounts of people work as service

professionals today (e.g., customer service representatives, consultants). Given this background, and the fact that research suggests that overload is one of the most important factors determining WHI (Aryee, 1992; Geurts, Rutte, & Peeters, 1999; Voydanoff, 1988; Wallace, 1999), the role of demands as an important variable and the need to measure a range of demands will be addressed. An innovation in the present study is not just to measure demands by measuring overload but also to assess a much richer set of demands by dividing them into quantitative, emotional and mental demands. In the present research, quantitative job demands refer to work overload or work pressure or too much work to do in too little time. Emotional job demands refer to the degree to which one's work puts one in emotionally stressful situations. Mental demands refer to the degree to which work tasks call upon you to expend sustained mental effort in carrying out your duties. The general definition of demands employed refers to the degree to which the working environment contains stimuli that require some effort (Jones & Fletcher, 1996), and encapsulate the idea that job demands lead to negative consequences if they require additional effort beyond the usual way of achieving the work goals (see Demerouti, Bakker, Nachreiner & Schaufeli, 2001).

In the literature, there is little evidence on the potential impact of home demands on outcomes. An example of an exception is a study by Parasuraman, Purohit and Godschalk (1992), among dual earner couples, which indicated that both men and women with pre-school children had more trouble combining work and family roles than the 'dinky's (double income no kids)'. Traditionally, the WHI literature has measured more structural home demands such as number of children, whether the partner has a job and child care arrangements. The present study will measure psychological demands. This does not imply that the more traditional demands are less important, but it merely signifies a desire to examine the home side of the work-family nexus in more psychological detail. This is in agreement with the idea that the perception of a stimulus or event as demanding is critical for the experience of strain (Cooper et al., 2001). The present study aimed at providing a more balanced view of work and home by designing a set of sub-scales that would roughly mirror the job demands scale. Conversely, and symmetrically, home demands will be operationalised by three sub scales; quantitative home demands, emotional home demands and mental home demands. Using a job-related measure as a model for constructing a symmetrical home-related measure has been used successfully in



the literature (e.g., Frone & Rice, 1987; Frone, Russell & Cooper, 1992, Parasuraman, Purohit & Godshalk, 1996).

2.2.3 Burnout

Originally, burnout was measured in the human services (for reviews see Schaufeli & Enzman, 1998), but recently a general measure has been developed to access burnout outside the human services: the Maslach Burnout Inventory-General Survey (MBI-GS). Accordingly, burnout is viewed as a syndrome of exhaustion, cynicism and professional efficacy. Burnout, referring to the draining of energy and resources caused by chronic job stress is considered a work-related indicator of psychological health (Schaufeli & Enzmann, 1998).

A large body of research has identified both job demands and WHI as antecedents of burnout. Firstly, research examining WHI and strains has yielded consistent and significant results. Several studies have shown that increased WHI is related to increased job burnout (Aryee, 1993; Bacharach, Bamberger, & Conley 1991; Burke, 1988; Drory & Shamir, 1988; Geurts et al., 1999; Greenglass & Burke, 1988; Izraeli, 1988; Kinnunen & Mauno, 1998). Secondly, workload and time pressure explains about 25-50% of the variance of burnout, especially of emotional exhaustion (Lee & Ashforth, 1996). Freudenberger called burnout ‘the disease of the over-committed’ or ‘the super-achiever sickness’, suggesting that burned-out employees suffer from an imbalance with their work and home lives. Indeed, Cherniss (1995) followed 26 young professionals who suffered from early career burnout over 12 years and found that those who recovered were more successful at balancing work, family, and leisure. Mashlach (1982) pays special attention to making the transition from work to home by introducing the notion ‘decompression’. Maslach argues that people working in an emotional and demanding environment need to ‘decompress’ before moving into the normal pressure of their private life. In the present research, it follows logically that WHI is an important variable that mediates the ability of individuals to ‘decompress’ from the work domain to the home domain.

In the present study, we restrict ourselves to the exhaustion and cynicism dimensions of burnout. These two dimensions are generally considered as the ‘core of burnout’ (Demerouti, Bakker, Nachreiner & Schaufeli, 2001; Green, Walkey & Taylor, 1991), whereas professional efficacy reflects a personality characteristic rather than a genuine burnout-component (Cordes & Dougherty, 1993; Shirom,



1989,). Empirically, this is reflected by the relatively low correlation of professional efficacy with both of the other burnout dimensions (Lee & Ashforth, 1996) and by the fact that cynicism seems to develop in response to exhaustion, whereas professional efficacy seems to develop independently and in parallel (Leiter, 1993).

2.2.4 WHI as a Mediator

The role of WHI (and consequently HWI) as a mediator has been suggested by various studies (Frone et al., 1992; Bakker & Geurts, 2002; Geurts, Rutte & Peeters, 1999; Kinnunen & Mauno, 1998; Parasuraman, Purohit, & Godschalk, 1996; Stephens, Franks, & Atienza, 1997). Baron and Kenny (1986) note that because most phenomena in psychology have multiple causes, a more realistic goal may be to seek mediators that significantly decrease the significance between the predictor and criterion. However, a review of the literature indicates that studies have not done an adequate job in either assessing mediation or distinguishing between full and partial mediation (see Holmbeck, 1997, for a review of assessing mediation). For example, Geurts et al. claim that WHI “plays a perfect mediating role”, (1999: 1144), but no effort was made to distinguish between partial and full mediation. Kinnunen and Mauno (1998) and Parasuraman et al. (1996) don’t actually assess the mediating role of WHI, except to report that WHI was related to various antecedents and outcomes.

It is important to distinguish between full and partial mediation, as there are strong grounds for believing that WHI may only play a partially mediating role. Firstly, given the fact that some demands are contextual (e.g., e-mails from colleagues or phone calls from clients which are never present in ones home life) it is less likely that all work demands will interfere with home and vice-versa. Secondly, there is accumulating evidence to suggest that job demands have a strong and direct relationship with outcomes such as burnout (see meta-analysis of Lee & Ashforth, 1996). Thirdly, anthropological studies of the way that people separate work and home suggest that some people separate and compartmentalize aspects of their work and home domains (Nippert-Eng, 1995), arranging their lives so that aspects of one domain doesn’t interfere with the other. An innovation of the present study will be to distinguish both empirically and theoretically between full and partial mediation effects.



2.2.5 The Present Study

The primary aim of the present research is to test a job and home demands model of work-home interference (see Figure 2.1) using a sample recruited from the Internet. Specifically, the research hypotheses are as follows:

- *H1: Job demands (quantitative, emotional and mental demands) have a direct and indirect effect relationship (through WHI) with burnout.*

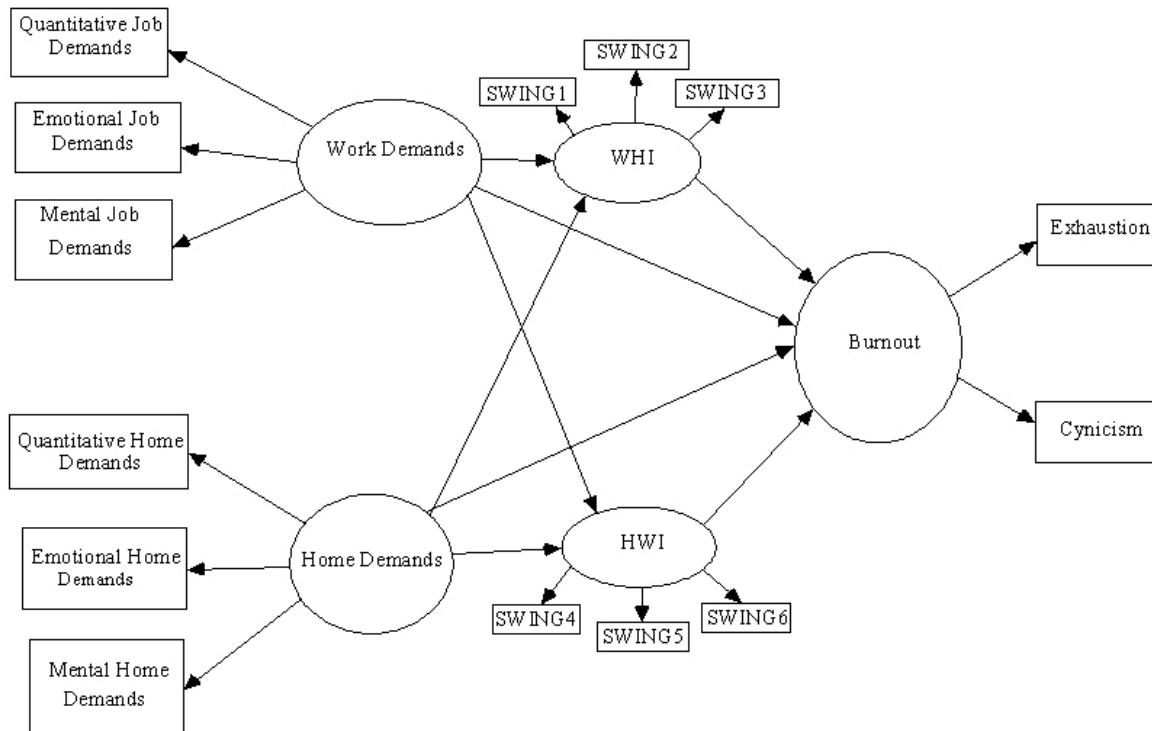


Figure 2.1 Job and Home demands model of work-home interference

- *H2: Home demands (quantitative, emotional and mental demands) have a direct and indirect effect relationship (through HWI) with burnout*

2.2.6 Generalizability of the Model

Several theoretical discussions of work-home stress processes have suggested that gender may represent an important moderator variable (e.g. Eckenrode & Gore, 1990; Lambert, 1990). Empirical work on WHI/HWI illustrates that it is a significant source of strain for both men and women, but that gender differences may exist (Cooper et al., 2001). Overall, the evidence for gender differences is mixed (Barnett, 1998; Milkie & Peltola, 1999). Potential gender differences in work-home stress processes are not always examined (a good exception is Frone et al., 1992) and this represents an important limitation in the literature. In addition, parenthood and the presence of children which can greatly increase time demands on a person, has been

identified as a primary source of home-related stress for both mothers (Lewis & Cooper, 1988) and fathers (Benin & Nienstedt, 1985). In view of the greater dependence of young children on adults, demands on a person is assumed to be strongest for persons with children, which corresponds to the peak stages in Lopata's (1966) model of family roles. Therefore, to address these issues, we examine the fit of our model across gender and parental status.

2.3 Method

2.3.1 Procedure

Once the questionnaire had been constructed, participants were recruited by means of advertising on a popular Dutch web-based magazine (<http://www.newmonday.com>). The data were stored in a cumulative file on-line, to be fed into SPSS. The survey followed all the general protocols for research participation, such as being anonymous and voluntary. After filling out the questionnaire, respondents were informed about their work-life balance, and they received feedback that was automatically tailored to their own scores.

The questionnaire was advertised by means of a 'banner' that provided a link to the site of the questionnaire. The banner was a rectangular shaped advertisement on the front page, entitled 'Test the balance in your work and home life'. Below this headline a small informational paragraph was included:

"Do you have enough time available for your work as well as for your private life? Or is one or the other giving you trouble all the time? Check your personal balance now. In addition to your personal score you will receive tips and advice. Please fill out the test." The banner remained on the web page for a period of four weeks.

2.3.2 Participants

Of the 1264 respondents (after preliminary data screening) who filled out the questionnaire, 737 (58%) were male and 527 (42%) were female. Participants ranged in age from 20 to 69 years of age ($M = 34$, $SD = 7.7$). On average, females were significantly younger ($M = 31$) than males ($M = 35$), $t(1214) = 7.80$, $p < .001$. The majority of people (76%) lived with a partner, and 42% of people had a supervisory position. 77% of respondents reported having a partner with a paid function and 42% of the respondents had children living at home. No statistical differences were found



between males and females with regard to reported levels of WHI, HWI or burnout. With regard to demands, females reported higher mean levels of emotional job demands, M for females = 1.77, M for males = 1.67, $t(1262) = 2.33$, $p < .05$, quantitative home demands, M for females = 2.45, M for males = 2.12, $t(1262) = 7.54$, $p < .01$, and mental home demands, M for females = 2.07, M for males = 1.76, $t(1262) = 7.27$, $p < .01$.

2.3.3 Measures

The Web-based questionnaire comprised of 79 questions with drop down response categories. Technical considerations and the nature of the Internet as a research tool suggested that it was important to keep the questionnaire as short as possible. Therefore, the included scales were shortened versions of their originals. Stanton, Sinar, Balzar & Smith (2002) encourage researchers to offer reduced-length versions of measures and suggest an exhaustive list of strategies to do so. Essentially, Stanton et al (200) recommend researchers to reduce scales based on indices of internal, external and judgmental item qualities. In accordance with this, selection of shortened versions was based on psychometric considerations with the most reliable (internal) and face valid items included (judgmental). In addition, the shortened scales correlated well with originals (external).

Work-home Interference (WHI) and Home-work Interference (HWI). WHI and HWI were measured using the Survey Work-Home Interference Nijmegen (SWING). The SWING is a 27-item work-home interference measure developed by researchers in the Netherlands (Wagena & Geurts, 2000). Many items in the SWING are congruent with the WHI/HWI scales of Netemeyer et al., (1996) and Kopelman et al., (1983). In the present research, the two types of interference were measured using 3 items each: (1) negative interference from 'work' with 'home' (negative WHI), referring to a negative impact of the work situation on one's functioning at home (three items; e.g. 'how often do you find it difficult to fulfil your domestic obligations because you are constantly thinking about work', $\alpha = 0.73$); (2) negative interference from 'home' with 'work' (negative HWI), referring to a negative impact of the home situation on one's job performance (three items; 'how often do you arrive late at work because of domestic obligations', $\alpha = 0.70$). All items are scored on a 5-point frequency scale ranging from '1' (never) to '5' (always).



Burnout. The Dutch version of the Maslach Burnout Inventory: General Survey (MBI-GS) was used to assess burnout (Schaufeli, Leiter, Maslach, & Jackson, 1996). Two sub-scales of the MBI-GS were assessed: Exhaustion (five items; e.g. ‘I feel used up at the end of the workday’, $\alpha = 0.92$), and Cynicism (four items; e.g. ‘I have become less enthusiastic about my work’, $\alpha = 0.86$). All items are scored on a 7-point frequency rating scale ranging from ‘0’ (never) to ‘6’ (daily). High scores on the exhaustion and cynicism sub-scales are indicative of burnout.

Job demands. Job demands were measured using three scales taken from the Dutch Questionnaire on the Experience and Evaluation of Work (De Vragenlijst beleving en beoordeling van de arbeid (VBBA); Van Veldhoven & Meijman, 1994); quantitative job demands (five items; e.g. ‘Do you have to work very fast?’), emotional job demands (4 items; ‘Is your work emotionally demanding?’) and mental job demands (4 items; ‘Must you be very precise in your work?’). All items are scored on 4-point scale from ‘1’ (never) to ‘4’ (always). Internal consistency for the quantitative job demands scale, emotional job demands scale and mental job demands scale were good, $\alpha = 0.73$, $\alpha = 0.86$, $\alpha = 0.89$, respectively.

Home demands. Given that no suitable instrument was identified for the measurement of home demands, it was decided to construct a specific home demands scale for the purposes of this study. The scale was constructed in such a way as to conceptually mirror the sub-scales of the job demands scale (see Appendix C). Therefore, the home demands scale consisted of a quantitative home demands scale (4 items; e.g. ‘Do you find that you are busy at home?’), an emotional home demands scale (3 items; e.g. ‘How often do emotional issues arise at home?’), a mental home demands scale (4 items; e.g. ‘Do you find that you have to plan and organize a lot of things in relation to your home life?’). Reliability analyses were carried out to assess the dimensions of the home demands scales. Internal consistencies of the quantitative home demands scale, emotional home demands scale and the mental home demands scales were good, $\alpha = 0.80$, $\alpha = 0.76$ and $\alpha = 0.80$, respectively.

2.3.4 Analysis Strategy

The factor structure and model testing of the SWING, job demands questionnaire and home demands questionnaire was tested using structural equation modeling (SEM) analysis, AMOS (Arbuckle, 1997). The maximum likelihood method was used to examine the covariance matrices of the items. A non-significant

chi-square value indicates a good fit. However, because trivial differences between the predicted and the observed covariance matrices may lead to a significant chi-square when large samples are used, the adequacy of the factor structure will also be assessed with the goodness of fit index (GFI) and the root mean square of approximation (RMSEA; Steiger, 1990). For the GFI, values of .90 or higher indicate a close fit between the model and the data. Browne and Cudeck (1993) have suggested that a RMSEA value of .05 indicates a very close fit, and that values from .05 up to .08 indicate a fair to mediocre fit and represents reasonable errors of approximation in the population. Three other fit indices provided by AMOS will be utilized in the present analysis, namely the incremental fit index (IFI, Bollen, 1989), the normed fit index (NFI; Bentler & Bonett, 1980), and the comparative fit index (CFI; Bentler, 1990). For each of these statistics values larger than or equal to .90 are considered acceptable.

2.4 Results

2.4.1 Assessing the Representativeness of the Internet Sample

Before testing our theoretical model for WHI/HWI, it follows logically that we should first comment on the representativeness of our Internet sample. In an effort to do this, the Internet sample demographics were compared with an estimated Dutch Internet Profile (Proflife, 2001; as recommend by the Central Bureau of Statistics for the Netherlands). A copy of full tables can be accessed from the first author on request. Although differences do exist among the various categories, overall the comparison is good with 89% of our Internet sample and 83% of the estimated Internet population below the age of 44. In our Internet sample, the majority of female respondents were between 25 and 44 (83%), compared with 67% in the estimated Internet population. Overall, comparison between the two sets of data suggests that the Internet data in the present study can be assumed to be representative of the Dutch Internet population, with the acknowledgement that the present sample had a larger proportion of younger women. Interestingly, comparison of our data with the general population statistics for the Netherlands (CBS, 2001) found that the gender divide in the Internet sample compared well with the general population, with women accounting for 42% of the Internet sample, compared with 51% of the general population. This statistic is in contrast to the idea of the Internet as a male dominated medium.



In addition to the previous analyses, it is useful to compare our Internet version with a paper-and-pencil version. Bakker and Geurts (2002) examined WHI and HWI among employees from a pension fund company (N= 507), employees from an occupational health care company (N = 202) and employees from an insurance company (N = 381). Both WHI and HWI were significantly higher among Internet respondents (with the exception for HWI of the Internet respondents and Insurance company employees, with no significant differences). Higher levels of WHI and HWI in our sample would seem to make sense given that our sample has a higher percentage of younger women (compared with the estimated Internet population), and this coincides with women of childbearing age.

2.4.2 Confirmatory Factor Analyses

As a prerequisite to addressing the central hypotheses in this study, we examined the factor structures of the scales. To examine the appropriateness of computing unidimensional scores for each of the major constructs included in the study, each scale was submitted to a principal components analysis (results can be obtained from the first author). Examination of both the number of eigenvalues greater than one and factor loadings supported a decision to treat the hypothesized scales as unidimensional.

Confirmatory Factor analysis was used to test the factor structure for three scales; SWING, job demands and home demands. Table 2.1 presents the results of simultaneous confirmatory factor analysis for each of the three scales. The SWING model with two factors (WHI and HWI) had a much better fit than a one-factor solution, $\Delta\chi^2(1) = 756$, $p < .001$. With regard to the job demands scale, the hypothesized three-factor model provided a good fit. Modification indices suggested the removal of one item (item 24: ‘Do you have enough time to finish your work?’) from the quantitative demands scale. This revised model provided a better fit to the data, $\Delta\chi^2(11) = 318$, $p < .001$. The hypothesized home demands model provided a good fit after the removal of one item (item 37: ‘Do you have enough time to finish all the things that you have to, around the house?’) from the quantitative home demands scale $\Delta\chi^2(9) = 62$, $p < .001$. Both removed items were from the quantitative demands scales.



Table 2.1 Confirmatory Factor Analysis

	χ^2	df	$\Delta\chi^2$	Δ df	p	GFI	IFI	NFI	CFI	RMSEA
SWING: One factor model	803.19	9				.83	.61	.61	.61	.26
SWING: Two factor model	47.78	8	756	1	.00	.99	.98	.98	.98	.06
Job Demands										
One factor model	3046.48	65				.66	.68	.67	.68	.19
Three factor model (TFM)	679.79	62	2367	3	.00	.92	.93	.93	.93	.09
TFM without Item 24	361.15	51	318	11	.00	.95	.97	.96	.97	.07
Home Demands										
One factor model	1003.00	44				.86	.85	.84	.85	.13
Three factor model (TFM)	349.39	41	654	3	.00	.95	.95	.94	.95	.08
TFM without item 37	287.48	32	62	9	.00	.95	.96	.95	.96	.08

2.4.3 Descriptive Statistics

Table 2.2 provides the means, standard deviations, and correlation coefficients of the study variables. Respondents reported significantly higher levels of WHI-negative in comparison with HWI-negative, $t(2526) = 23.91, p < .001$. As expected, WHI-negative is positively correlated with HWI-negative ($r = .31, p < .01$) indicating that both constructs are related. WHI-negative was moderately correlated with exhaustion ($r = .50, p < .01$) and weakly with cynicism ($r = .22, p < .01$). HWI-negative was moderately correlated with exhaustion ($r = .34, p < .01$) and cynicism ($r = .33, p < .01$). Respondents reported higher mean levels of quantitative job demands compared with quantitative home demands, $t(2526) = 8.17, p < .001$, and higher mean levels of mental job demands compared with mental home demands, $t(2526) = 34.34, p < .001$. Comparison between mean levels of burnout of the respondents in this study and 190 Dutch managers from the Utrecht Burnout Manual (Schaufeli & Van

Dierendonck, 2000) indicates that the respondents in the present study had a higher mean levels of cynicism ($\underline{M} = 2.49$ & $\underline{M} = 1.71$, $t(1452) = 8.43$, $p < .001$, and exhaustion, ($\underline{M} = 2.78$ & $\underline{M} = 1.42$, $t(1452) = 15.56$, $p < .001$). All the correlations were significant and in the expected direction.

2.4.4 Model Testing for the Full Sample

Table 2.3 summarises the goodness of fit indices for three models (one baseline model and two substantive models). The baseline model was the independence model in which covariation among all the variables was constrained to zero. The large and significant chi-square value for the null model indicates a poor fit to the data, indicating that there is significant covariation among the variables. On the basis of our theoretical expectations we expect the model in Figure 2.1 to fit best. In order to test this systematically, two substantive nested models were tested: the theoretical model as shown in Figure 2.1 (model A) and a modified model whereby job demands and home demands were allowed to covary (model B). The modifications made in model B is based on an examination of the modification indices and theoretical considerations. Model fit improved when job and home demands were allowed to covary (model B) and two non-significant paths were removed (the path from work demands to HWI-negative and the path from home demands to WHI-negative) $\Delta\chi^2(1) = 315.26$, $p < .001$. Finally, an examination of the modification indices revealed that the overall fit of the model B could not be substantially improved by freeing any of the remaining paths that were constrained to equal zero. At this point, satisfaction with the content of the model had been achieved. RMSEA indicates that some model improvement is still possible, however, the modification indices no longer show theoretically defensible modifications that provide a large enough improvement.

Table 2.2 Means, Standard Deviations and Correlations

Variable	Mean	s.d.	1	2	3	4	5	6	7	8	9
1 WHI	2.15	0.81									
2 HWI	1.46	0.63	0.31**								
3 Quantitative job demands	2.52	0.82	0.39**	0.12**							
4 Emotional job demands	1.71	0.71	0.29**	0.17**	0.46**						
5 Mental job demands	2.97	0.82	0.22**	0.14**	0.63**	0.48**					
6 Quantitative home demands	2.26	0.78	0.21**	0.27**	0.32**	0.30**	0.39**				
7 Emotional home demands	1.66	0.65	0.23**	0.42**	0.31**	0.35**	0.40**	0.49**			
8 Mental home demands	1.89	0.76	0.16**	0.30**	0.30**	0.27**	0.41**	0.69**	0.55**		
9 Exhaustion	2.78	1.11	0.50**	0.34**	0.45**	0.46**	0.40**	0.39**	0.40**	0.34**	
10 Cynicism	2.49	1.19	0.22**	0.33**	0.22**	0.30**	0.23**	0.31**	0.30**	0.28**	0.64**

Note. ** $p < .01$

2.4.5 Alternate models

De Jonge et al (2001) have questioned the role of WHI/HWI as a mediator in the job stress literature. They suggest that models which position WHI as an independent variable should be tested to try to empirically answer this question. In the present research, recalculating the model with WHI and HWI as independent variables and job demands and home demands as mediators tested this suggestion

Compared with our final model, there was a significant increase in the chi-square and the fit indices indicating a worse fit (Alternate model: chi-sqn = 744.680, df = 67, GFI = .923, IFI = .900, NFI = .891, CFI = .899, RMSEA = .089), therefore suggesting a worse fitting model. In addition, as before, evidence of job demands and home demands as mediators were tested using the procedure recommended by Holmbeck (1997). No evidence of full mediation was found for either job demands or home demands. No evidence of partial mediation was found for home demands acting as a partial mediator. Some evidence was found for partial mediation for job demands, with the path coefficient from WHI to burnout reducing with the inclusion of job demands (from $\beta = .44$ to $\beta = .32$). Overall, the alternate model with WHI and HWI as independent variables was rejected on empirical and theoretical grounds. The idea of WHI/HWI as independent variables is at variance with our contention that WHI/HWI suggests a mediational process by definition.

2.4.6 Parameter estimates.

With regard to the first and second hypothesis, there was only evidence of partial mediation. Parameter estimates for Model B are shown in Figure 2.2. Job demands and home demands indicated a significant covariation. The mediational paths in the theoretical model suggests that WHI will partially mediate between job demands and burnout, and conversely, HWI will partially mediate between home demands and burnout. The present approach taken to the assessment of mediation within an SEM model is the one recommended by Holmbeck (1997). According to this approach, there is a latent predictor variable (A), a hypothesized mediator variable (B), and a latent outcome variable (C).

Table 2.3 Evaluation of Full model

	χ^2	df	$\Delta\chi^2$	Δdf	p	GFI	IFI	NFI	CFI	RMSEA
Baseline (Null Model)	6822.94	91				.43	.00	.00	.00	.24
Model A	957.93	71	5865.01	20	.00	.91	.87	.86	.87	.10
Model B	642.67	70	315.26	1	.00	.93	.92	.91	.92	.08

Note. χ^2 = chi-square, df = degrees of freedom; $\Delta\chi^2$ = chi-square difference, GFI = goodness-of-fit index; IFI = incremental fit index; CFI = comparative fit index, RMSEA = root mean square error of approximation.

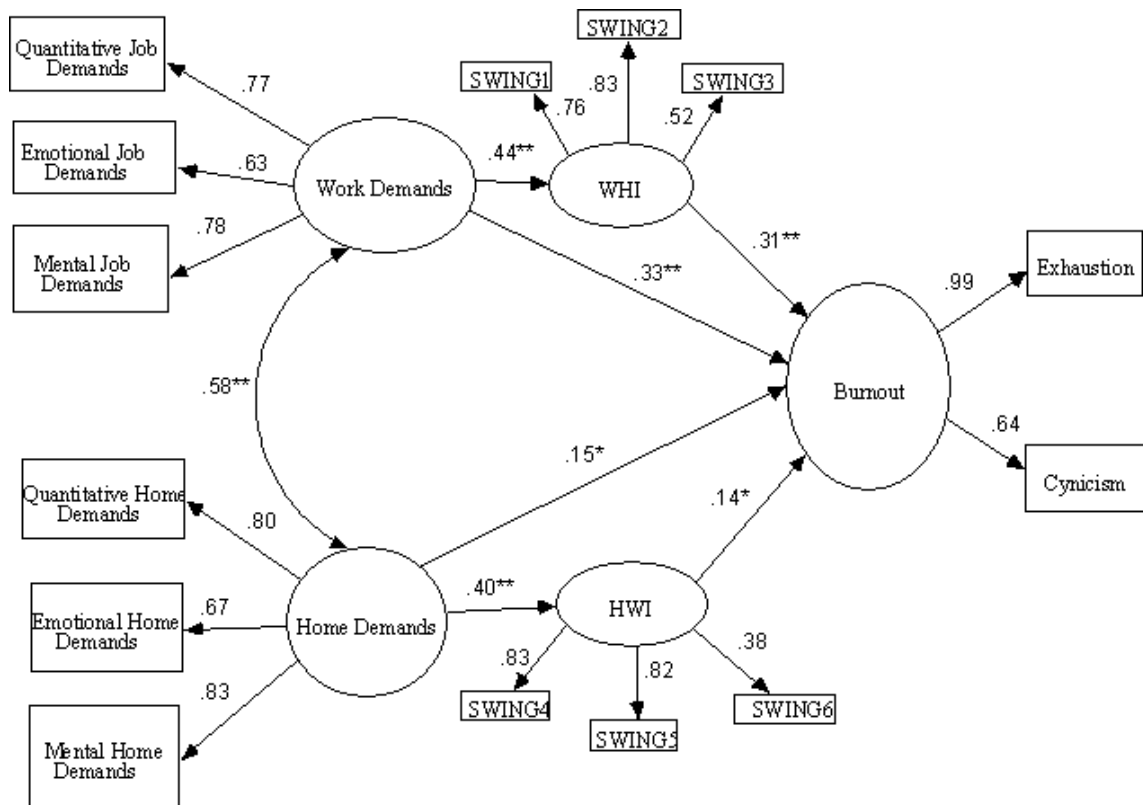


Figure 2.2 Parameter estimates of Model B

Firstly, one assesses the fit of the direct path between predictor and criterion (A to C). Assuming the overall fit provides an adequate fit to the data, the A to B and B to C paths are examined. A to C, A to B, B to C should all be significant in the direction predicted. The final step in assessing whether there is a mediational effect is to assess the fit of the A to B to C model under two conditions: (a) when the A to C path is constrained to zero, and (b) when the A to C path is not constrained. One then examines whether the second model provides a significant improvement in fit over the first model. If there is a mediational effect, the addition of the A to C path to the constrained model should not improve the fit. Using this methodology, no support was found for either WHI-negative or HWI-negative as full mediators between demands and outcomes. However, Holmbeck (1997) also suggests that partial mediation can be indicated by examining the A to C path coefficients for when the proposed mediator is and is not included. Using this approach, it was found that the path coefficient from work demands to burnout reduced with the inclusion of the mediator WHI-negative; (from $\beta = .84$ to $\beta = .66$). Similar results were found for the relationship between home demands and burnout, with the inclusion of the mediator (HWI-negative; from $\beta = .35$ to $\beta = .22$). These results suggest a partial mediation

effect. In addition, analysis of the correlations (Table 2.2) reveals that quantitative job demands were most strongly correlated with WHI ($r = .39, p < .01$), and emotional home demands were most strongly correlated with HWI ($r = .42, p < .01$). Therefore, evidence was found to support hypotheses one and two.

2.4.7 Multiple Group Comparisons

To examine whether the findings based on the full sample were invariant across different categories, differences between constrained and unconstrained models were examined. For example, to examine invariance across gender, fit indices between group models were specified with increasing levels of constraint, from the initial model where all of the parameters were freely constrained to a successive level of constraint whereby factor loadings, path coefficients and error variances were constrained. If the Chi-square difference test reveals a lack of invariance, a logically organized strategy of sequentially and incrementally constraining factors is recommended (see Byrne, 2001 for a full discussion). The general scheme is to initially test for the invariance of all factor loadings, and then, assuming non-invariance at this level, sequential testing of parameter estimates until a chi-square difference is found. Using the Byrne (2001) approach in the present study, equality constraints were specified in each group for factor loadings on; burnout, WHI, HWI, work demands and home demands, respectively. Factor loadings were incrementally constrained until a significant difference in chi-square was found (see Table 2.4).

Gender. Significant differences were found between the unconstrained model and the constrained models (males, $N = 737$; females, $N = 527$). This suggests that one or more of the individual parameter estimates varied across the two groups. Sequential examination of the factor loadings revealed that males and females were not invariant across work demands, WHI and HWI. Examination of the parameter estimates revealed that WHI was more strongly associated with burnout for females ($\beta = .42, p < .01$), compared to males ($\beta = .22, p < .01$).

Table 2.4 Goodness-of-Fit Information for Group Comparisons

Group	χ^2	df	$\Delta\chi^2$	Δ df	p	GFI	IFI	NFI	CFI	RMSEA
Gender										
Free Parameters	608.37	134				.94	.93	.91	.93	.05
Equal Factor Loadings	638.96	143	30.62	9	.00	.93	.93	.91	.93	.05
Equal Path Coefficients	678.14	150	39.14	7	.00	.93	.92	.90	.92	.05
Equal Error Variances	740.64	167	62.50	17	.00	.92	.92	.89	.92	.05
Children at home										
Free Parameters	534.97	134				.94	.93	.91	.93	.05
Equal Factor Loadings	558.12	143	23.15	9	.00	.94	.93	.91	.93	.05
Equal Path Coefficients	619.79	150	61.67	7	.00	.93	.92	.90	.93	.05
Equal Error Variances	721.38	167	101.59	17	.00	.92	.91	.88	.91	.06

For males home demands had a more significant direct relationship with burnout ($\beta = .21, p < .01$), as compared with females ($\beta = .05, p < .01$).

Young children at home. With regard to the category of whether respondents had children at home (Respondent had no children, $N = 796$; Respondent had young children living at home < 13 years old, $N = 372$), significant differences were found between the constrained models and unconstrained ones. Given that the chi-square differences were significant, it is suggestive of the fact that the model is not invariant across these two groups. Sequential examination of the constraints revealed differences in the factor loadings for both home and work demands.

2.5 Discussion

Using the internet as a means to collect data, this research made the following contributions: (1) It expanded upon our knowledge of the nature of the mediational effect of WHI and HWI on the demands-burnout relationship, (2) It offered a more precise specification of job and home demands likely to affect burnout, (3) explored possible gender and parental status differences in the network of demands, WHI/HWI, and burnout and (4) It showed the utility of the internet in data collection.

The primary aim of this research was to test a job demands and home demands model of WHI/HWI. A significant result of the research was that we found partial mediational effects for both WHI and HWI. Taking work and home to be the two primary domains for people, this confirms one of our basic ideas that demands both at work and home interfere with functioning in the opposing domain and contribute to feelings of burnout.

An important innovation of the present research in comparison with previous research was that full and partial mediation was distinguished between. It is of critical importance that researchers make an effort to, firstly, properly assess whether evidence of mediation is present and, secondly, to distinguish between level of mediation. In the present study, support was found for WHI and HWI as partial mediators between demands and burnout. This probably suggests that certain demands are domain specific (such as mental demands) and are less likely to interfere between domains. For example, certain demands such as answering the phone and responding to e-mails may be more structurally linked and may only be an issue within an individual's work setting and therefore less likely to cause interference from work to home. Evidence of such a contextual effect can be found in Table 2.2, which

reveals that WHI is most strongly correlated with quantitative job demands and HWI is most strongly related to emotional home demands, suggesting that different antecedents are ‘driving’ the different forms of interference. A finding of partial mediation, with some demands more strongly related to WHI and HWI doesn’t lessen the importance of WHI and HWI. Rather, it suggests that if an organisation wants to reduce the demands of its employees and reduce levels of WHI and HWI, it needs to address the demands that are more likely to spill over from one domain to the next, as opposed to a more ‘general’ strategy that aims to reduce the quantitative demands of workers.

A second important innovation of the present research was the measurement of job and (especially) home demands in a detailed way. This is a response to researchers who call for us to broaden our perspective of demands (De Jonge & Dormann, 2002; De Jonge et al., 1999; Le Blanc, Bakker, Peeters, Van Heesch & Schaufeli, 2001). Using demands that are specific will provide more opportunities to detect meaningful associations between variables. In the present study, significant differences were found between reported levels of quantitative job demands versus quantitative home demands, and between mental job demands and mental home demands. Such a difference indicates the importance of quantitative and mental demands within the job domain. Assessment of both job and home demands (from a subjective framework) helps to widen the debate beyond the structural characteristics of work and home.

2.5.1 Generalizability of the Model

The observed gender differences are in disagreement with previous studies that have tested for and found no gender differences in work-home/family models (Bedeian, Burke & Moffet, 1988; Frone, Russell & Cooper, 1992). Our results suggest that males and females experience WHI and HWI in different ways. Of particular interest was the fact that WHI was more strongly related to burnout for females. This may suggest that for Dutch working women, the higher levels of WHI makes it more likely they will suffer from burnout, and such a finding finds agreement with gender socialisation theory (Barnett & Rivers, 1998), and suggestive of the fact that women must tackle the double burden of work and home (more than men). Indeed, the fact that for men, home demands were strongly related to burnout may suggest that the males in our sample were less able to cope with the strains of



home. Indeed, Milkie & Peltola (1999) have suggested that women may have developed more adaptive strategies for dealing with the burdens of the job and home domains. As expected, our model did not fit with respect to the category of parental status suggesting that the presence of children is an important consideration with respect to how we conceptualise work/home processes.

2.5.2 The Internet as a Research Tool

The potential of the Internet as a possible research tool has been well documented (Buchanan & Smith; 1999; Schmidt, 1997). In relation to the issue of whether the Internet is viable place to carry out psychological research, the evidence presented is favourable. The strength of the present research was that the research topic was targeted at the individuals who would be most likely to be drawn from the strata of society who have jobs involving multiple demands and who have to balance their busy work lives with their home lives. Congruently, these individuals are most likely to be representative of the Internet population in the Netherlands. The fact that our female sample tended to be younger than the estimated Dutch Internet Population is consistent with the idea that younger women, who are both starting their careers and having babies, are most likely to suffer from work-home interference problems (68% of our female respondents had children living at home).

2.5.3 Limitations

Although the data provides us with interesting information about factorial validity of the job demands and home demands scales, only predictive validity information was gained in relation to burnout. It would have been interesting to also include other measures of work-home interference and also to relate the SWING and home demands scales to more home-related dependent measures. The sub-scales that were employed represent negative constructs (work interfering with home and vice-versa). Positive versions of the WHI and HWI do exist (Wagena & Geurts, 2000) but were not used in this research due to the limitation of having to keep the questionnaire length below a certain length for use on the Internet. Finally, the present study is cross-sectional and thus the postulated relationships cannot be interpreted causally. Longitudinal studies and/or quasi-experimental research designs are needed to further validate the hypothesised causality of the relationships.

The huge advantage in using Internet mediated research is that it can provide large amounts of data in a short time, at very little cost. However, the Internet as a



research tool is difficult to have control over and it is impossible to have information about the non-responders in the sample. It is possible that the people who filled in the questionnaire were the most motivated individuals, and thereby not representative of the total population of people in the Netherlands who have work-home interference problems. In this sense, the results of the research may be most pertinent to people from the upper strata of society who have access to the Internet. Although the Internet can provide increased heterogeneity, and this may equal increased representativeness, this increased heterogeneity can come with a cost. The Internet may introduce unknown confounding variables, which might have the effect of increasing 'noise' in the data, and reducing the proportion of variance in responses accounted for by differences in the causal entity that one is trying to measure. Overall, this research expanded upon our knowledge of the nature of the mediational effect of WHI and HWI on the demands-burnout relationship and offered a more precise specification of job and home demands likely to affect burnout.



Chapter 3 Work-Home Interference among Newspaper Managers: Its Relationship with Burnout and Engagement⁵

3.1 Abstract

Managers are increasingly concerned about managing the conflicts experienced in fulfilling the responsibilities of work and family. The problem of balancing these domains arises from work to home interference, which reflects a mutual incompatibility between the demands of the work role and the demands of the home life. The central idea underlying the theoretical model of this study, is that work and home demands lead to work strain and decreased feelings of engagement, while work and home resources lead to increased feelings of engagement and reduced burnout. Work to home interference mediates these relationships. An innovation of the present study was to assess both home demands and positive aspects of work to home interference. Data were collected from 69 newspaper managers. Results indicated that negative interference mediated between demands and outcomes, and positive interference mediated between resources and outcomes. This study highlights the importance of measuring positive concepts in terms of constructing a more balanced picture of work and home interference.

3.2 Introduction

Organisational stress research has consistently shown the negative effects of stressors upon different indicators of strain and in particular, the negative effect of stress on managers has been well documented (e.g. Turnage & Spielberger, 1991; Van der Pompe & de Heus, 1993). Feelings of being overwhelmed by perceived time pressures and deadlines, exorbitant work demands and informational overload are several aspects of excessive quantitative job demands that managers can suffer from (Parasuraman & Alutto, 1981). Stress may affect managers, and through the diminution of their performance, may decrease the effectiveness and efficiency of their employing organisations (Greenglass, 1993). The pivotal position that managers play in the overall functioning of an organisation within an increasingly competitive

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business environment (globalisation) means that managers with many work demands are at risk of work interfering with home and vice-versa.

3.2.1 Empirical & Theoretical Background

Work and family constitute the dominant life roles for most employed adults in contemporary society. Thus, employed men and women are increasingly concerned about managing the conflicts experienced in fulfilling the dual demands and responsibilities of work and family roles. Work-Home interference (WHI) and Home-Work Interference (HWI) is 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). A large body of literature has identified WHI/HWI as being associated with reduced job and life satisfaction (see Kossek & Ozeki, 1998 for discussion). In contrast with this, organisational policies designed to help employees integrate work and family roles do not necessarily reduce WHI (Barling, 1994) and are marginally effective at best (Solomon, 1994). This all suggests that research has an important role to play in identifying the processes through which WHI and HWI affects employee health and well-being.

Theoretically, WHI research has been dominated by the role strain perspective, which suggests that the responsibilities from both domains compete for limited amounts of time and energy (Greenhaus & Beutell, 1985). A parallel body of theory to the role strain approach suggests that participation in multiple roles provides a greater number of opportunities and resources to the individual that can be used to promote growth and better functioning in other life domains (Marks & MacDermid, 1996; Sieber, 1974). Therefore, despite a large focus in the literature on interference or conflict, separate but related bodies of research suggest that work can benefit home life (e.g. via work skills generalizing to the home environment) and that home can benefit work (e.g. via the buffer role of support). A good example of this positive interference or positive spillover can be found in Grzywacz & Marks (2000), who found that positive spillover was related to factors that facilitated development (e.g. decision latitude, family support). The evidence for positive spillover (i.e. work-home enhancement) means that any attempt to measure a balanced picture of work and home needs to account for positive aspects. Therefore, an innovation of the present study will be to also measure WHI-positive and HWI-positive (in addition to the more traditional WHI-negative and HWI-negative).



Frone, Russell and Cooper (1992, 1997) have demonstrated most clearly the need to examine domain specific models that examine both work and home in equal detail. The need to build a more balanced picture of the stress process and to account for 'positive' interference can also be seen in the recent Job Demands-Resources Model (JD-R) (Demerouti, Bakker, Nachreiner & Schaufeli, 2001). The model is concerned with the development of burnout and makes a good case for the antecedents of stress outcomes to be rooted in the combination of high demands and poor resources. The JD-R model makes the assumption that whereas every occupation may have specific antecedents associated with burnout; these factors can be classified into two general categories (i.e., job demands and job resources). Conceptually, the JD-R can be found to be rooted in Karasek's Job-Demands-Control model (JD-C) (Karasek & Theorell, 1990) and Hobfoll's (1989) Conservation of Resources theory (COR). In the present research the JD-R model is the theoretical background to how demands and resources can influence burnout. Job demands refer to those physical, social and organisational aspects that require sustained physical and/or mental effort and are therefore associated with certain physiological and psychological costs (e.g. exhaustion). Job resources refer to those physical, psychological, social or organisational aspects of the job that are either/or (1) functional in achieving work goals, (2) reduce job demands at the associated physiological and psychological costs, (3) stimulate personal growth and development. Demerouti et al (2001) suggest that there is little evidence to support an interaction between job demands and job resources, and therefore the theory concentrates on the specific contribution of job demands and job resources to job burnout. It follows logically that WHI and HWI are rooted in the interference caused by having too many demands and not enough resources, and consistently that such interference can exacerbate feelings of burnout. Research examining the relation between WHI and burnout has yielded consistent and significant support for these expectations (see the recent meta-analysis by Allen, Herst, Bruck & Sutton, 2000).

3.2.2 Demands

One of the most promising models of the relationship between work characteristics and psychological health is the demand-control-support (DCS) model (Karasek & Thorell, 1990). One aspect of the model that has received critical attention is the possible multifaceted nature of job demands. Different types of job



demands have been rarely examined within the framework of the model (with the exception of; De Jonge, Mulder & Nijhuis, 1999; Soderfeldt, Soderfelt, Muntaner, Jones, O'Campo, Ohlson & Warg, 1997). Given this background, and the fact that research suggests that overload is one of the most important factors determining WHI (Geurts, Rutte, & Peeters, 1999; Voydanoff, 1988; Wallace, 1999), the role of demands as an important variable and the need to measure a range of demands will be addressed. A more comprehensive picture of job and home demands will be ascertained by also evaluating emotional and mental demands. Although rarely studied, some studies have demonstrated both emotional demands (Pekrun & Frese, 1992; Le Blanc, Bakker, Peeters & Van Heesch, 2001) and mental demands (Cooper & Kelly, 1984; Kahn & Boysoiere, 1992) as important components of job stress. In the present study, job demands will be operationalised by three sub-scales; quantitative job demands, emotional job demands and mental job demands.

Conversely, and symmetrically, home demands will be operationalised by three sub scales; quantitative home demands, emotional home demands and mental home demands. In the literature on WHI, there is little evidence on the potential impact of home characteristics on WHI (e.g. Kopelman, Greehaus, & Connoly, 1983; Voydanoff, 1988). Traditionally, the WHI literature has measured more structural home characteristics such as number of children, whether the partner has a job and child care arrangements. The present study aimed at providing a more balanced view of work and home by measuring job and home demands. This does not imply that the more traditionally characteristics are less important, but it merely signifies a desire to examine the home side of the work-family nexus in more psychological detail.

In sum: The present study proposes that:

- *H1: WHI-negative will mediate the relationship between work demands and outcomes*
- *H2: HWI-negative will mediate the relationship between home demands and outcomes*
- *H3: WHI-positive will mediate the relationship between work resources and outcomes*

- *H4: HWI-positive will mediate the relationship between home resources and outcomes*

3.2.3 Resources

In the present research, social support is the resource that is being studied. From Rapoport and Rapoport's (1971) early identification of the facilitating husband to the more recent assertions regarding the importance of family-responsive employers (Friedman, 1990), social support has been viewed as a significant resource that can promote effective coping and enhance employee well-being in the face of work-family stress (Repetti, 1989; Weiss, 1990). Support from work and family can reduce demanding aspects of a job. For example, a supervisor who extends a project deadline or a co-worker who takes on additional work (Greenhaus & Parasuraman, 1994). Adams, King and King (1996) found a negative relation between family support and HWI, while additionally, Thomas and Ganster (1995) found that supervisor support was negatively related to WHI. Research on occupational and family stress often distinguishes support from the work domain (supervisor, co-worker) and support from the family domain (spouse, friends). The present study acknowledges this important difference between work support and family support, and will assess their differential influence on the outcomes. Literature concerning social support suggests that it can work either as a 'buffer' or main effect (Greenhaus & Parasuraman, 1994). As already stated, the JD-R model doesn't support the idea of an interaction between resources and demands. Therefore we formulate the following hypothesis:

- *H5: Social support will only have a main effect on burnout and engagement.*

However, in the interest of empiricism, moderation or 'buffer' effects were tested in addition to main effects.

3.2.4 Engagement & Burnout

Engagement, as a measured concept, is a relatively new addition to the occupational field and should be viewed as part of a more general emerging trend towards a 'positive psychology' that focuses on human strengths and optimal functioning rather than on weaknesses and malfunctioning (Seligman & Csikszentmihalyi, 2000). In the view of Maslach and Leiter (1997), engagement is

characterised by energy, involvement and efficacy which are postulated as the direct opposites of the three burnout dimensions; exhaustion, cynicism and lack of professional efficacy. Engaged employees are assumed to have a sense of energetic and effective connection with their work activities and they see themselves as able to deal completely with the demands of work. Within the framework of WHI/HWI, it is plausible that positive interference may lead to feelings of engagement in employees.

Burnout, referring to the draining of energy and resources caused by chronic job stress is considered a work related indicator of psychological health (Cooper et al, 2001). In the present study, we restrict ourselves to the exhaustion and cynicism dimensions of burnout. These two dimensions are generally considered as the 'core of burnout' (Green, Walkey & Taylor, 1991), whereas professional efficacy reflects a personality characteristic rather than a genuine burnout-component (Shirom, 1989, Cordes & Dougherty, 1993). Empirically, this is reflected by the relatively low correlation of professional efficacy with both of the other burnout dimensions (Lee & Ashforth, 1996) and by the fact that cynicism seems to develop in response to exhaustion, whereas professional efficacy seems to develop independently and in parallel (Leiter, 1993). Therefore it was decided to also measure the vigour and dedication aspects of engagement. Schaufeli et al (2002) suggest that vigour and dedication can be viewed as being the opposite of exhaustion and cynicism, respectively. While, the fact that burnout has been consistently related to various negative demands and outcomes (for a review, see Schaufeli & Enzmann, 1998), it is important and interesting to examine whether positive outcomes such as engagement are related to similar demands and resources.

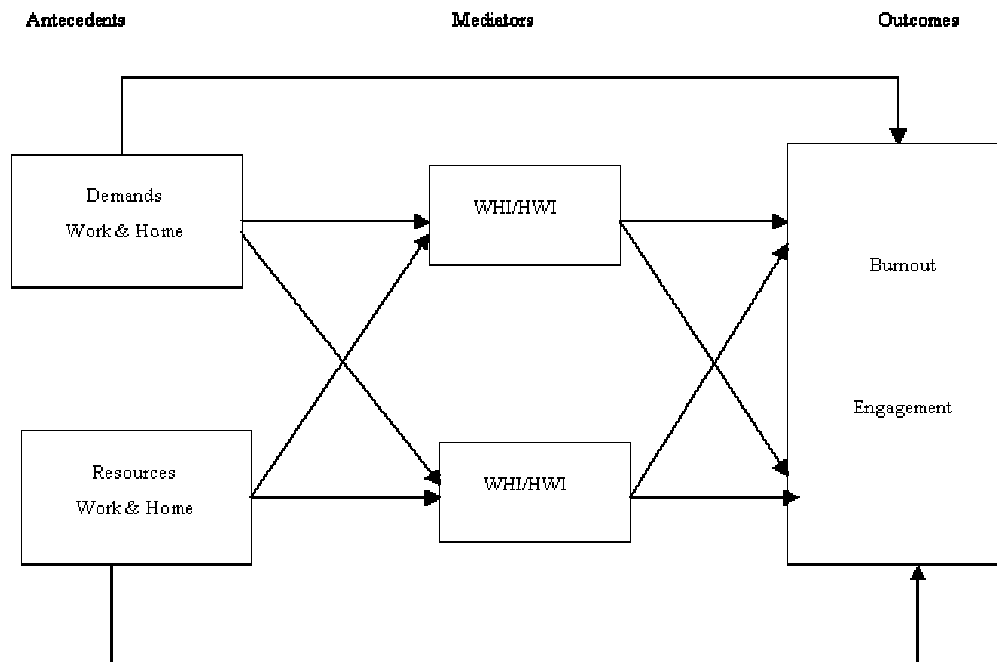


Figure 3.1 Conceptual Model

3.2.5 Hypothetical Model

When integrating all the hypotheses that are formulated, the following model emerges (see Figure 3.1). The central idea underlying the model is that job and home demands lead to work strain (i.e. burnout) and decreased feelings of engagement (i.e. dedication & vigour), while job and home resources (i.e. social support) lead to increased feelings of engagement and reduced burnout.

3.3 Method

3.3.1 Procedure

A cross-sectional study was conducted among a selection of newspaper managers attending a management-training workshop (N=127). The managers were informed of the study at the training workshops and were given the questionnaires, while attending these workshops. 69 employees responded to the survey (response rate = 54%). This compares favourable with the average response rate for published research in the managerial and behavioural sciences (55.6% overall and 36.1% for studies concerning top managers or organisational representativeness, see Baruch, 1999, for review).

3.3.2 Participants

The sample was predominately male (81%) and the average age was 45 years (s.d. = 8, range = 29-59). The average length of time spent working at their present employer was 17 years (s.d. = 9, range = 1-40). All of the subjects involved in the study held a supervisory position. The average number of persons under their supervision was 19 (s.d.= 30, range = 1-180). The majority of managers lived at home and was married (90%) and over half of them had children living at home (61%).

Demographic data on the total population of managers, available to be surveyed, indicated that the average age was 45 years and the gender breakdown was 81% men and 19% women. Therefore, the study sample was taken as representative of the total population of managers at the newspaper firm.

3.3.3 Measures

WHI & HWI was measured using the Survey Work-Home Interference Nijmegen (SWING): The SWING is a 27-item work-home interference measure developed by researchers in the Netherlands (Wagena & Geurts, 2000). It measures four types of work-home Interference (WHI): (1) negative interference from 'work' with 'home' (negative WHI), referring to a negative impact of the work situation on one's functioning at home (9 items: e.g. 'your work schedule makes it difficult to fulfill domestic obligations, $\alpha = 0.75$); (2) negative interference from 'home' with 'work' (negative HWI), referring to a negative impact of the home situation on one's job performance (6 items: e.g. 'you have difficulty concentrating on your work because you are preoccupied with domestic matters, $\alpha = 0.75$); (3) positive interference from 'work' with 'home' (positive WHI), referring to a positive influence of the work situation on one's functioning at home (6 items: you come cheerfully home after a successful day at work, positively affecting the atmosphere at home, $\alpha = 0.89$); (4) positive interference from 'home' with 'work' (positive HWI), referring to a positive impact of the home situation on one's job performance (6 items: you are better able to interact with your colleague/supervisor as a result of the environment at home, $\alpha = 0.92$). All items are scored on a 5-point frequency rating scale ranging from '1' (never) to '5' (always).

Burnout. The Maslach Burnout Inventory: General Survey (MBI-GS) was used to assess burnout (Schaufeli, Leiter, Maslach, & Jackson, 1996). The MBI-GS includes three sub-scales: Exhaustion (five items; e.g. 'I feel used up at the end of the



workday'), Cynicism (five items; e.g. 'I have become less enthusiastic about my work') and Professional Efficacy (which was not included in this study). All items are scored on a 7-point frequency rating scale ranging from '0' (never) to '6' (daily). High scores on the exhaustion and cynicism sub-scales are indicative of burnout. In this study, exhaustion ($\alpha = 0.87$) and cynicism ($\alpha = 0.76$) were measured by 5 and 4 items, respectively, of the Dutch version of the MBI-GS.

Engagement. The Engagement measure used in this study was developed by Schaufeli, Salanova, Gonzalez-Roma & Bakker (2002) and consists of three subscales; vigour, dedication and absorption. Dedication and Vigour are the subscales used in this study. Vigour (e.g. 'I feel vital and strong when I work') and Dedication (e.g. 'My work still inspires me') items are scored the same as the MBI-GS, on a 7-point frequency rating scale ranging from '0' (never) to '6' (daily). In the present study, Dedication ($\alpha = 0.91$) and Vigour ($\alpha = 0.89$) were measured with 6 and 5 item sub-scales, respectively.

Social Support. Social support was measured using a scale developed by Peeters et al (1995). This scale was divided into four 4 sub-scales: social support from your colleagues (4 items; e.g. 'My work colleagues pay attention to my feelings and problems', $\alpha = 0.75$), social support from your supervisor (4 items; e.g. 'My supervisor/boss shows that s/he appreciates the way I do my job', $\alpha = 0.92$), social support from your family (4 items; e.g. 'If it is necessary, my family helps me with a certain task', $\alpha = 0.84$) and social support from your friends (4 items; e.g. 'If it is necessary, my friends give me advice on how to handle things', $\alpha = 0.87$). Responses ranged from 1 (never) to 5 (always). Each sub-scale comprised of all the same items.

Job demands. Job demands were measured using three scales taken from the Dutch Questionnaire on the Experience and Evaluation of Work (VBBA; Van Veldhoven & Meijman, 1994); quantitative job demands, emotional job demands and mental job demands. Internal consistency for the emotional job demands scale was acceptable ($\alpha = 0.74$). The internal consistency of the mental job demands scale was improved by removing one item ($\alpha = 0.76$, based on three items). The alpha level for the quantitative job demands scale was less than satisfactory ($\alpha = 0.56$). Removal of items did not influence the alpha level, so it was decided to use the 5-item scale, while accepting that the internal consistency was less than good.



Home demands. Given that no suitable instrument was identified by the researchers for the measurement of home demands, it was decided to construct a home demands scale for the purposes of this study. The scale was constructed in such a way as to conceptually mirror the subscales of the work demands scale. Therefore, the home demands scale consisted of a quantitative home demands scale (6 items; e.g. 'Do you find that you are busy at home'), an emotional home demands scale (3 items; e.g. 'How often do emotional issues arise at home?'), a mental home demands scale (3 items; e.g. 'Do you find that you have to plan and organise a lot of things in relation to your home life').

In the piloting stages of the research, ten newspaper managers were interviewed using a semi-structured format. The purpose of these interviews was to assess the face validity of the measures. Managers rated the home demands scale items in a systematic way according to the dimensions of clarity, relevance and preciseness (Panagopoulou & Maes, 2000). The items of the home demands scales were rated at an adequate level in all three categories.

Reliability and factor analyses were carried out to assess the dimensions of the home demands scales. Internal consistencies of the quantitative home demands scale and the mental home demands scales were acceptable ($\alpha = 0.79$ and $\alpha = 0.67$, respectively). The internal consistency of the emotional home demands scale was low ($\alpha = 0.50$), and therefore it was decided to measure emotional demands using one item (i.e., 'Does your housework confront you with things that touch you personally'). This item was chosen as having the best face validity.

3.4 Results

Table 3.1 shows the mean, standard deviation and correlations of the study variables. WHI-negative was reported at higher levels than HWI-negative, but differences were not statistically significant. Higher levels of HWI-negative were reported for managers whose partner had a job (compared with managers who had a partner, but she/he didn't have a job) ($t(60) = 2.45, p < .05$). Comparison between mean levels of burnout of the managers in this study and 190 Dutch managers from the Utrecht Burnout Manual (Schaufeli & Van Dierendonck, 2000) indicates that the managers in the present study had a lower mean level of cynicism (0.87 Vs 1.42, $t(257) = 3.61, p < .001$) and exhaustion (1.16 Vs 1.71, $t(257) = 3.56, p < .001$). Analysis of mean levels for both job and home demands indicates that

Table 3.1 Means, Standard Deviations and Correlations

		Mean	SD	2	3	4	5	6	7	8
1	WHI-Negative	1.70	0.44	.28*	-.21	-.37**	.39**	.42**	.04	.70**
2	HWI-Negative	1.18	0.25		.18	.00	.02	.17	.13	.08
3	WHI-Positive	2.43	0.94			.73**	-.05	-.09	-.06	-.31**
4	HWI-Positive	2.50	1.08				-.06	-.09	.23	-.37**
5	Quantitative job demands	2.63	0.43					.28*	.18	.21
6	Emotional job demands	1.85	0.39						-.21	.36**
7	Mental job demands	3.52	0.45							.10
8	Exhaustion	1.16	0.87							
9	Cynicism	0.87	0.61							
10	Vigour	4.26	0.96							
11	Dedication	4.61	0.91							
12	Social support (colleagues)	3.08	0.69							
13	Social support (supervisor)	2.77	0.90							
14	Social support (family)	3.19	0.97							
15	Social support (friends)	2.75	0.92							
16	Quantitative home demands	2.13	0.49							
17	Emotional home demands	2.00	0.51							
18	Mental home demands	1.56	0.46							
19	Positive Interference	2.47	0.94							
20	Social support (family & friends)	2.97	0.85							

		9	10	11	12	13	14	15	16	17
1	WHI-Negative	.40**	-.17	-.17	-.19	-.18	-.05	-.01	.08	.08
2	HWI-Negative	.08	-.24*	-.01	.19	.14	.10	.16	.29*	.35**
3	WHI-Positive	-.35**	.06	.27*	.35**	.25*	.01	.17	-.09	.06
4	HWI-Positive	-.32**	.27*	.23	.34**	.26	.17	.21	-.18	-.11
5	Quantitative job demands	.12	.20	.05	-.03	-.01	.05	.02	.21	.20
6	Emotional job demands	.33**	.11	-.10	-.06	.06	.14	.20	.02	.02
7	Mental job demands	.05	.15	.19	.03	-.11	-.09	-.09	.17	-.08
8	Exhaustion	.35**	-.26*	-.09	-.18	-.18	-.09	-.08	.08	-.03
9	Cynicism		-.18	-.49**	-.29*	-.35**	-.13	-.12	-.15	.12
10	Vigour			.59**	.25*	-.14	.20	.21	-.17	-.15
11	Dedication				.27*	.17	.07	.04	.04	.12
12	Social support (colleagues)					.31*	.35**	.44**	.02	.30*
13	Social support (supervisor)						.10	.12	.19	.24*
14	Social support (family)							.61**	-.00	-.15
15	Social support (friends)								-.04	-.02
16	Quantitative home demands									.48**
17	Emotional home demands									
18	Mental home demands									
19	Positive Interference									
20	Social support (family & friends)									

		18	19	20
1	WHI-Negative	.24*	-.31**	.03
2	HWI-Negative	.39**	.09	.14
3	WHI-Positive	-.09	.92**	.10
4	HWI-Positive	-.10	.94**	.21
5	Quantitative job demands	.15	-.06	.06
6	Emotional job demands	.27*	-.10	.18
7	Mental job demands	-.08	-.16	-.09
8	Exhaustion	.14	-.37**	.01
9	Cynicism	.14	-.36**	-.14
10	Vigour	-.05	.18	.23
11	Dedication	-.01	.26*	.06
12	Social support (colleagues)	.03	.37**	.44**
13	Social support (supervisor)	.05	.28*	.12
14	Social support (family)	-.06	.10	.90**
15	Social support (friends)	-.02	.20	.89**
16	Quantitative home demands	.53**	-.11	.02
17	Emotional home demands	.37**	-.03	-.09
18	Mental home demands		-.11	-.04
19	Positive Interference			.17
20	Social support (family & friends)			

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



mental job demands were higher than mental home demands ($t(136) = 25.30$, $p < .001$) and quantitative job demands were higher than quantitative home demands ($t(136) = 6.37$, $p < .01$).

As expected, WHI-negative was correlated with HWI-negative ($r = .28$, $p < .05$), suggesting that they are related but separate domains. Due to the high correlation between the positive sub-scales ($r = .73$, $p < .01$), principal component factor analysis was carried out on WHI-positive and HWI-positive. Both sub-scales loaded heavily on one factor, and coupled with the high correlation this suggested that regression analysis would suffer from multi-collinearity. Therefore, it was decided to treat them as one scale, positive interference between home and work ($\alpha = 0.94$). Also, social support from the family and social support from friends was highly correlated ($r = .61$, $p < .01$). Given this high association, it was decided to collapse these scales into one scale for the purposes of analysis, referred to as social support from family & friends ($\alpha = 0.89$). In terms of the outcomes, WHI-negative was correlated with both exhaustion ($r = .70$, $p < .01$)⁶ and cynicism ($r = .40$, $p < .01$) and HWI-negative was correlated with vigour ($r = -.24$, $p < .01$). Positive Interference was correlated with exhaustion ($r = -.37$, $p < .01$), cynicism ($r = -.36$, $p < .01$) and dedication ($r = .26$, $p < .05$). In terms of relationships between the four outcomes and as hypothesised by the work of Schaufeli et al (2002), exhaustion was correlated with vigour ($r = -.26$, $p < .05$), and cynicism was correlated with dedication ($r = -.49$, $p < .01$). Vigour was correlated with dedication ($r = .59$, $p < .01$). The small sample size ($N = 69$) precluded the use of structural equation modelling to examine the different paths in the model. Multiple regression was used to explore the different associations between the various mediation paths (see Tables 3.2 & 3.3).

3.4.1 Mediation paths

Tables 3.2 & 3.3 show the results of mediation analyses, carried out in line with methodology suggested by Baron & Kenny (1986). Accordingly, a prerequisite for mediation is that the predictor, mediator and dependant variables must be significantly related. Mediation is demonstrated by a reduction in the impact of the

⁶ Factor analysis was inconclusive and did not suggest one factor. Therefore, on theoretical grounds, it was decided to treat both variables as separate entities even though they had a high correlation ($r = .70$, $p < .01$)

predictor on the dependant measure after controlling for the mediator (see Column B in tables 3.2 & 3.3). Mediation analysis was carried out for all proposed hypotheses (H1 to H4) between demands/resources and outcomes, with WHI-negative, HWI-negative and positive interference as potential mediators. As Baron & Kenny (1986) discussed, it would be unusual in psychology for the coefficient to be reduced to zero by the mediator, therefore the degree to which the effect is reduced (e.g. the change in regression coefficients) is an indicator for potency of the mediator. Using the methodology employed by Eckenrode, Laird & Brathwaite (1995) reduction of the coefficient to zero equals full mediation and reduction of the coefficient, but still significant is equal to partial mediation. In the latter case, it is desirable to report indirect effects and estimate confidence intervals for such effects (Sobel, 1988). However, Sobel (1988) recommends such estimation only in large samples (>100).

Table 3.2 indicates that WHI-negative is a partial mediator between emotional job demands and both burnout dimensions (H1). This indicates that emotional job demands increase WHI-negative, which in turn increases the exhaustion levels of the managers. In addition, HWI-negative partially mediated between mental home demands and cynicism, but this partial mediation was not considered significant, as HWI-negative and cynicism didn't correlate significantly (H2). Table 3.3 indicates that positive interference partially mediates between social support

Table 3.2 Mediation analysis of WHI, HWI and positive interference between antecedents and burnout

	A	B	A	B
	β	β	β	β
Job demands	Exhaustion	Exhaustion	Cynicism	Cynicism
Quantitative job demands	.09	-.09	.02	-.07
Emotional job demands	.37**	.13	.33**	.21
Mental job demands	.16	.13	.01	.00
WHI-negative		.67**		.33*
R ² (R ² adjusted)	.17 (.14)	.52 (.49)	.11 (.07)	.19 (.14)
Home Demands	Exhaustion	Exhaustion	Cynicism	Cynicism
Quantitative Home demands	.06	.06	-.27	-.27
Emotional Home demands	-.11	-.13	-.11	-.14
Mental home demands	.15	.13	.33*	.30*
HWI-negative		.06		.11
R ² (R ² adjusted)	.03 (-.02)	.03 (-.03)	.10 (.06)	.11 (.05)
Resources	Exhaustion	Exhaustion	Cynicism	Cynicism
SS from Colleagues	-.19	-.08	-.20	-.12
SS from Supervisor	-.13	-.07	-.29*	-.24*
SS of Family/Friends	.11	.11	-.02	-.01
Positive Interference		-.34**		-.24*
R ² (R ² adjusted)	.06 (.02)	.16 (.10)	.16 (.12)	.21 (.16)

Note. * $p < .05$, ** $p < .01$, SS = Social Support

Table 3.3 Mediation analysis of WHI, HWI and positive interference between antecedents and Engagement

	A	B	A	B
	β	β	β	β
Job demands	Vigour	Vigour	Dedication	Dedication
Quantitative job demands	.19	.30*	.10	.17
Emotional job demands	.08	.21	-.09	-.02
Mental job demands	.13	.15	.15	.16
WHI-negative		-.38**		-.23
R ² (R ² adjusted)	.07 (.03)	.18 (.13)	.05 (.00)	.09 (.03)
Home Demands	Vigour	Vigour	Dedication	Dedication
Quantitative Home demands	-.16	-.15	.01	.01
Emotional Home demands	-.10	-.04	.14	.15
Mental home demands	.07	.12	-.06	-.05
HWI-negative		-.22		-.05
R ² (R ² adjusted)	.04 (-.01)	.08 (.02)	.02 (-.03)	.02 (-.04)
Resources	Vigour	Vigour	Dedication	Dedication
SS from Colleagues	.26	.21	.27*	.22
SS from Supervisor	-.24	-.26	.10	.06
SSof Family/Friends	.14	.14	-.08	-.07
Positive Interference		.15		.17
R ² (R ² adjusted)	.13 (.09)	.15 (.10)	.09 (.05)	.11 (.06)

Note. * $p < .05$, ** $p < .01$, SS = Social Support

from supervisor and cynicism. This indicates that social support from one's supervisor can have a positive effect on a manager's level of cynicism (decreasing) via positive interference (H3). Although no support was found for H4, analysis of the mediational effect of positive interference between social support from colleagues and vigour/dedication shows that both beta-weights decreased enough to suggest positive interference may mediate between resources and engagement in a larger study.

3.4.2 Moderation between Resources and Demands

As stated in the introduction, we tested for possible moderating effects of social support. Empirically, it was appropriate to examine moderation by estimating interaction effects between resources and demands (using the methodology of Aiken & West, 1991). No conclusive evidence was found. The fact that a main effect was found for social support (on cynicism) and no conclusive evidence was found for moderation effects provides limited support for the fifth hypothesis (H5).

3.5 Discussion

Overall, the current study examined what types of demands and resources were mediated by WHI/HWI in relation to burnout and engagement. In addition, this research provided an extension of previous studies of job demands by expanding the amount of job demands studied and by including a symmetrical set of home demands. The inclusion of positive measures of WHI/HWI was also an innovation.

The present research provided us with the following conclusions. Firstly, in terms of burnout it was found that WHI mediated between emotional job demands and exhaustion and cynicism. The fact that WHI didn't mediate quantitative or mental job demands suggests that certain demands are contextual in terms of their ability to influence WHI. This suggests that demands such as workload or the need to concentrate continuously are more specific to the work situation in comparison with emotional demands, which are more likely to be brought home. Therefore, strategies to reduce WHI should be careful to implement demand reduction strategies that actually influence WHI. The fact that HWI didn't play a significant role as a mediator may be related to the fact that the outcomes were work-specific. Such a conclusion is supported by the fact that none of the home demands indicated any direct relationship with the outcomes. Alternatively it may be possible that the respondents in the sample (which were predominately male) didn't carry the burden of their home-related demands to work with them. Secondly, the results of our study supported one of the



main tenets of the JD-R model that demands and resources work in relatively independent paths. It is important to note that the JD-R model is a parsimonious model that is capable of integrating a wide range of potential job demands and resources. Accordingly, it can be useful in studying different profiles of demands and resources that might be typical for job-related outcomes in specific populations. This idea of different paths is congruent with the longitudinal study of burnout by Leiter (1990). Leiter found evidence that family coping resources and work-related coping resources influenced the burnout process in different ways, whereby family resources influenced emotional exhaustion more and work-related resources influenced depersonalisation more. Interestingly, Leiter found independent paths from family/home and work to burnout, which may help to explain the observed independence of demands and resources in the present study. Thirdly, an innovation of the present study was the assessment of a broader set of both job and home demands. The inclusion of emotional and mental demands has helped to widen the debate surrounding demands and the inclusion of home demands has helped us to construct a more balanced picture of the work-home nexus. All three forms of home demands were significantly related to HWI, which strongly suggests that they have value in terms of elaborating the role of HWI in the future. Finally, a further innovation in this study was the measurement of positive outcomes, as a comparison and counter-balance to the more traditional negative ones. Much of the research on the relationship between work and family has been negative in that it has emphasised the dysfunctional consequences of work-family interactions (Greenhaus & Beutell, 1985). Although the positive consequences of the work-family relationship have been discussed (Kanter, 1977), very little research has sought to identify these positive linkages. Herzberg's (1966) two factor theory of work motivation proposes that different work characteristics produce job dissatisfaction and satisfaction. Given this need to also examine positive outcomes, the identification of factors that promote well-being in employees is important. Our study found that positive interference was correlated with feelings of dedication. A human resources intervention which emphasises the role of resources and uses the concept of engagement to characterise what makes successful employees function better, has a greater chance of organisational acceptance.



3.5.1 Limitations

This research has a number of significant limitations. Firstly, the present study had a cross-sectional design. In order to solve cause and effect issues and to disentangle the complex interplay between past experiences and psychological functioning, longitudinal research is needed. However longitudinal designs need to be reserved for circumstances when their considerable research power can be used to maximum advantage and not wasted on exploratory investigations in new research domains. Cross-sectional data cannot prove causation but can be a valuable method of sorting out which causal hypotheses are sufficiently plausible to warrant testing through longitudinal designs. They can also provide important initial tests of the causal hypotheses.

Secondly, the present analysis is based on a small sample size. Smaller sample sizes mean that researchers have to be careful in using parametric statistics. Assumptions of normality were checked with all statistical procedures in order to insure reliable results. Added to this, the fact that we carried out many multiple regression analyses means that the possibility of chance capitalisation can't be completely ruled out.

Thirdly, the study relied exclusively on self-report measures that could increase the problem of common method variance. Unfortunately, we cannot test the strength of this type of variance, but several studies (Semmer, Zapf & Greif, 1996; Spector, 1992) have indicated that common method variance is not as troublesome as one might expect in these kind of studies. A related issue to common method variance is potential confounding effect of negative affectivity (NA) in self-report research (Watson & Clark, 1984). Recent research, however, justifies the omission of this potential confounder in research. Moyle (1995) in a study of possible influences that negative affectivity could have on the stressor-strain relationship concluded that NA cannot generally account for the observed correlations between work environment measures and strains. Similarly, Schonfield (1996) concluded that NA does not overly distort self-report measures and strain outcomes. Indeed, Dollard and Winefield (1988) even warn against that practice to control for the nuisance aspects of this trait as this may lead to underestimation of the impact of the work environment on strain. In addition to these three major limitations, the theoretical model (Fig 3.1) and the desire to conceptualise a more balanced approach to the problem of balancing work

and home, our model was a little “imbalanced” in that we only measure work-related outcomes. This fact was compounded by the need to collapse WHI-positive and HWI-positive into one scale (positive interference), which resulted in a loss of specificity. Also, more work needs to be done to increase the reliability of the home demands scale. For example, the emotional home demands scale was reduced to one item due to a poor alpha level among the items, however the use of one-item measures has not been dismissed as having no value (see Wanous et al, 1997, for a discussion). Finally, the fact that the majority of the sample was male meant that comparisons between males and females would not have been meaningful.

3.5.2 WHI & HWI

This research established WHI as a reliable mediator for burnout (but not for engagement), in agreement with other studies that have found it to play a mediating role between work and home characteristics, on the one hand, and psychological indicators on the other (Geurts, Rutte & Peeters, 1999; Parasuraman, Purohit, & Godschalk, 1996; Stephens, Franks, & Atienza, 1997). Given that burnout has been related to various negative health (e.g. depression) and organisational (e.g. absenteeism, job turnover, performance, and quality of services) outcomes (for a review see Schaufeli and Enzmann, 1998), the observed relationships between the interference variables and burnout means that human resources strategies need to be tailored to take account of both WHI and HWI. The fact that no mediational role was found for WHI/HWI between resources and engagement may be due to the fact that we had to collapse these into one single scale, and maybe lost specificity. These three groups of variables were significantly correlated and the mediator effects were suggested by reduced betas between the independent and dependent variables. Therefore, future research with more specific measures of positive interference and larger samples may indicate significant effects. The present study distinguished between partial and full mediation effects, and suggests that future researchers need to properly account for this. Although, many researchers have recommended the assessment of HWI (Frone, Russell & Cooper, 1992; Kirchmeyer & Cohen, 1999; Kossek & Ozeki, 1998), research has tended to concentrate on the role of WHI and the empirical evidence that does exist, has tended to support the preponderance of WHI as the most important variable (with the exception of Frone, Russell & Cooper, 1997), thereby suggesting they have asymmetrical importance. One of the

implications of the present study is that it goes some way to re-establishing HWI as an important variable in the picture of work to home interference.



Chapter 4 Crossover and Work-Home Interference⁷

4.1 Abstract

In the present study, we examine crossover - the transmission of stress and strain from one spouse to another - in a sample of 78 information technology (IT) professionals and their working spouses. Results of hierarchical regression analysis indicated the following: (H1) For IT professionals, work-home interference (WHI) was directly linked to work-related outcomes (i.e., burnout, turnover intention); (H2) Crossover effects were found between the home-work interference (HWI) of the IT professional and the exhaustion and turnover intentions of their spouse. For IT professionals, negative affectivity (NA) was a significant predictor of all outcomes, whereas for the spouse NA was only a predictor for exhaustion and psychosomatic health. The relevance of these findings to crossover research is discussed.

4.2 Introduction

There is considerable evidence that job stress can have a detrimental effect on the psychological and physical well-being of workers (Cooper, Dewe & O'Driscoll, 2001). For example, an increased workload may lead to problems with balancing work and home, or contribute to feelings of burnout (within-individuals). In comparison, the area of crossover has had less attention paid to it (Westman, 2001). Crossover is defined as the reaction of individuals to the job stress and strain experienced by those with whom they interact regularly (between-individuals). So, within any couple the demands of the job (stressor) or feelings of burnout (strain) can contribute to the stress and/or strain of his/her partner. Westman and Etzion (1995) note that while the spillover of experiences from one domain of a person's life to another has been documented extensively, the phenomenon of how stress and strain of one person affect other individuals has been less exhaustively investigated. The aim of the following study is to examine both spillover and crossover processes in a sample of workers and their working spouses.

⁷ Chapter submitted for publication as: Montgomery, A.J., Peeters, M.C.W., Panagopoulou, E. & Schaufeli, W.B. Crossover and Work-Home Interference.



4.2.1 Theoretical Background

Westman (2001) has noted that the crossover literature does not reveal a systematic theoretical and empirical approach that distinguishes between the possible explanations of crossover effects. Three mechanisms have been identified as explaining crossover: a direct process, a spurious effect via common stressors and an indirect effect. The direct effect is based on the idea that crossover effects appear between closely related partners who share and care for each other. Such a role for empathy is supported by those researchers interested in perspective taking and empathic concern (e.g. Davis, 1983), who suggest that individuals imagine how they would feel in the position of another and consequently experience such feelings (Eckenrode & Gore, 1981). The common stressors mechanism as suggested by Westman and Vinokur (1998) suggests that crossover is the result of common stressors in a shared environment. This view suggests that people in close relationships may experience shared stressors (e.g., economic hardship) creating psychological strain in both of them. Indeed, Hobfoll and London (1986) suggest that many stressors make simultaneous demands on both individuals in a dyad. The indirect mechanism is posited on the idea that partners' strain may exhaust his/her partner's ability to cope, thereby increasing the partner's vulnerability to stress (Burke, Weir & DuWors, 1980; Jackson & Maslach, 1982). Consideration of these three mechanisms together provides the background to the routes to which stress can 'travel' from one partner to another. The present study is primarily interested in the way that the interference felt between the work and family roles contributes to strain experienced by the respective partner. Indeed, there is already evidence (see Fletcher, 1991) that the effects of work stress carry over to the home such that the well-being of the cohabiting partner can also be adversely affected. Therefore, the present study will extend the crossover paradigm by focusing on Work-Home Interference (WHI) and Home-Work Interference (HWI). WHI and HWI can be considered as outcomes of the involvement in work and family roles associated with being in a dual-earner couple is interference between the domains of work and home. WHI and HWI is 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). The logical connection between WHI/HWI and crossover is highlighted by the review of Westman (2001), which indicates that role stressors are

one of the main antecedents of crossover. Models of work-home processes have been criticised as being either atheoretical (Barnett, 1998; Zedeck, 1992) or badly conceptually integrated (Lambert, 1990). Westman (2001) suggests that crossover could be theoretically anchored to role theory (Kahn et al., 1964). According to Westman (2001), the usefulness of role theory is that it underscores the interrelations between the focal person and his/her role senders in the different settings (work/home) where the individual finds his/herself. Role theory is a sound basis for crossover research, as first, it relates both to the person and to his or her role senders, thus encompassing spouses and the interaction between them, and second, because it focuses on a wider role stress paradigm than the WHI models. The model delineated in Figure 4.1 uses role theory as an anchor for the theoretical development. This conceptualisation allows us to view the relationship between the focal person and the other in both the domains of work and home. The core assumption is that one's stress or strain has an impact on others in different settings, indicating a relationship between stress and strain in the individual arena and the stress and strain between two people.

However, a significant weakness in the crossover literature concerns the lack of studies investigating the specific effect of wives employment on husband strain in the non-work domain (Westman, 2001). In particular, specific mechanisms of the wife's employment that may cause crossover with regard to the strains experienced by their husbands have not been well specified or accounted for. In general, these studies have not eliminated the possibility that it is their (the wife's) own job stress that causes the strain. Exceptions to this is the study by Westman and Etzion (1995) which demonstrated that there was crossover of burnout from career officers to their spouses and vice versa, after controlling for job stress of each partner. Indeed, in a review of the crossover literature, Westman (2001) identifies only eight studies as examining the bi-directional crossover of stress or strain among both spouses (Barnett et al., 1995; Hammer, Allen & Grigsby, 1997; Jones & Fletcher, 1993; Morrison & Clements, 1997; Westman & Etzion, 1995; Westman & Vinokur, 1998; Westman, Etzion & Segev, 2002; Westman, Vinokur, Hamilton & Roziner, 2002) and of these only two assessed WHI in relation to this issue. Hammer, Allen and Grigsby (1997) found a bi-directional crossover of WHI from husbands to wives and vice-versa. Similarly, Westman et al. (2002) found a bi-directional crossover of WFC in a sample of women in the US army and their spouses.



Thus, in spillover, stress experienced in one domain of life results in stress in the other domain for the same individual; whereas in crossover, stress experienced in one domain (i.e., work, home) by the individual leads to stress being experienced by the individual's spouse. In this sense, spillover is an intra-individual transmission of stress, whereas crossover is dyadic and an inter-individual transmission of stress or strain (Westman, 2001). First of all it is important to see how one's stress affects one's own level of strain and in the second stage, how one's strain affects the strain of one's partner. So these issues constitute a two-level process.

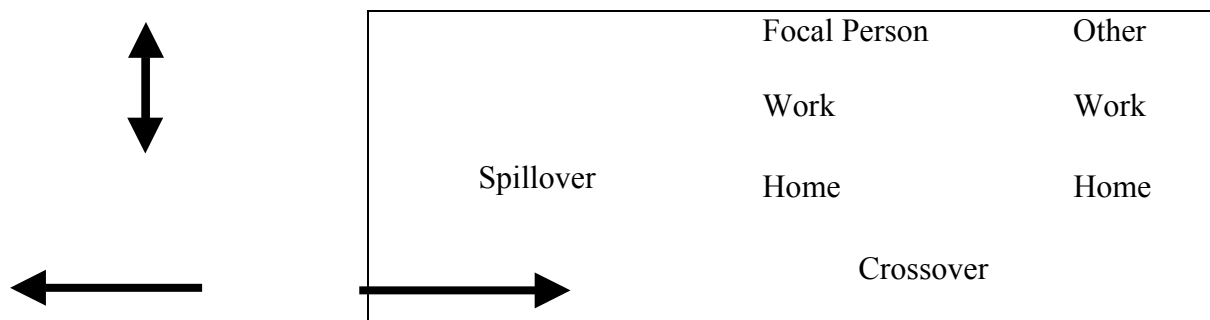


Figure 4.1 The conceptual model

4.2.2 Negative Affectivity

A personal trait relevant to crossover research is negative affectivity (NA), defined by Watson and Clark (1984) as a stable tendency to express emotions across time and situations. An exhaustive review of the crossover literature by Westman (2001) identified only one study that had examined and controlled for NA. Morrison and Clements (1997) used NA of both spouses as a control variable. They found that the female's NA was a significant predictor of her reported well-being across each of the dependant measures studied (physical health, depression). However, NA affected only physical complaints among the males. Therefore, not controlling for NA may overestimate the effect of the individual's job stress on the spouse's well-being.

Researchers have only recently acknowledged the role of psychological individual difference variables in work-family relationships (Greenhaus & Parasuraman, 1999). NA has been examined in three studies of WHI (Carlson, 1999; Frone, Russell & Cooper, 1993; Stoeva, Chiu & Greenhaus, 2002). This limited research suggests that NA is associated with WHI. Indeed, Carlson (1999) found that NA was related to three forms of WFC; time based conflict, strain-based conflict, and behaviour based conflict. Additionally, Stoeva et al. (2002) found moderate

correlations between WHI ($r = .17, p < .05$) and HWI ($r = .16, p < .05$) measures. Although the need to study NA has been questioned by researchers (Dollard & Winefield, 1988; Schonfield, 1996), the present research will adhere to the advice of Spector, Zapf, Chen and Frese (2000) to include NA in studies of stressor-strain relationships, but only if one has good conceptual reasons for doing so.

The present study will account for a more differentiated view of the NA process by specifying between NA at home and NA at work. Given that NA is assumed to be stable across both time and situations, this will provide an opportunity to assess how stable NA is across the domains of work and home. Although, this is the first study to make such a dichotomy, Williams et al. (1991) did examine affect across an eight-day period using an experience sampling methodology. Interestingly, Williams et al. (1991) found that affect at work did not influence end-of-day home satisfaction, nor did home affect influence end-of-day job satisfaction. Such research is suggestive of the idea that there is not a one-to-one relationship between mood in the work domain and mood in the home domain. Therefore, in the present study, NA at both home and work of both the IT professional and their spouse will be accounted for and controlled for.

4.2.3 Outcome Variables

The meta-analysis of Allen, Herst, Bruck and Sutton (2001) presents the most comprehensive review of the consequences associated with WHI. Conceptually, Allen et al. (2000) divided the consequences into three general areas: work-related outcomes, non-work related outcomes and stress-related outcomes. In the present research, we will examine outcomes in these three areas also; marital satisfaction (non-work related outcome), turnover intention (work-related), burnout and psychosomatic complaints (stress-related outcomes). Burnout, referring to the draining of energy and resources caused by chronic job stress is considered a work-related indicator of psychological health (Schaufeli & Enzmann, 1998). Several studies have shown that increased WHI is related to increased job burnout (Aryee, 1993; Bacharach, Bamberger, & Conley 1991; Burke, 1988; Geurts, Rutte & Peeters, 1999; Greenglass & Burke, 1988; Kinnunen & Mauno, 1998). Additionally, psychosomatic health complaints have been related to WHI (Burke, 1994; Stephens, Franks & Atienza, 1997). The relationship between marital satisfaction and WHI has been mixed, with some studies finding an association (Barling, 1986, Duxbury et al,

1996), with others only finding significant associations for women (Kinnunen & Mauno, 1998; Matthews, Conger & Wickrama, 1996). The chosen outcome variables represent a broad range of measures to assess the effects of WHI/HWI within individuals (spillover) and between individuals (crossover).

4.2.4 Aims and Hypotheses

The present research will contribute to the transference of stress literature by demonstrating that there is a link between the stressor of one partner and the strain experienced by their spouse. In addition, this research will control for the effects of NA, a variable hypothesised to inflate the relationship. A within-individual relationship between stress (WHI/HWI) and strain (e.g. burnout, satisfaction) for each individual within the dyad can be expected (see Allen et al., 2000 for a review of the literature). Therefore, our initial hypothesis addressed itself to this expected relationship.

- *H1: There will be a direct relationship between WHI/HWI and the work-related/non-work related outcomes, after controlling for negative affectivity.*

The potency of the dyad in the transmission of stress from one partner to another can be found in the interviews conducted by Pearlin and Turner (1987). They found that although interviewees would try to segregate the stress arising from the workplace and from the family domain, stress would be transmitted in other ways. Spouses reported that they could tell when their partners were stressed, regardless of whether the partner referred to it. Additionally, research at the organisational level suggests that feelings of strain (burnout) can be contagious between colleagues (Bakker & Schaufeli, 2000; Bakker, Schaufeli, Sixma & Bosveld, 2001). Based on the research and theory of crossover effects (Westman, 2001), the following hypothesis was examined.

- *H2: The WHI/HWI of one spouse will exhibit a crossover relationship with the work-related/non-work related outcomes of his/her spouse.*



4.3 Method

4.3.1 Sample & Procedure

This study is part of a larger study concerned with assessing work and home related issues among Information Technology (IT) professionals in the Netherlands. Members of the professional association for IT professionals in the Netherlands were contacted via post. Participants were asked to fill in the enclosed questionnaire and pass a second questionnaire to their spouse to fill in. Participants were urged to fill out their respective questionnaires separately and return the questionnaires in the pre-paid envelopes provided (two separate envelopes were provided). In total, 84 couples agreed to participate in the study and the final sample equalled 78 dual-working couples, after removing 6 individuals who had no paid job.

4.3.2 Measures

Work-Home Interference (WHI) & Home-Work Interference (HWI). WHI and HWI were measured using one instrument, covering both sub-scales: Survey Work-Home Interference Nijmegen (SWING). The SWING is a work-home interference measure developed by researchers in the Netherlands (Wagena & Geurts, 2000). WHI, referring to a negative impact of the work situation on one's functioning at home (e.g. "your work schedule makes it difficult for you to fulfill your domestic obligations"), is measured by nine items. HWI, referring to a negative impact of the home situation on one's job performance (e.g. "you arrive late at work because of domestic obligations"), is measured by six items. All items are scored on a 4-point scale from '0' (never) to '3' (always).

Burnout. The MBI-GS was used to assess burnout (Schaufeli, Leiter, Maslach, & Jackson, 1996). The MBI-GS includes three sub-scales: Exhaustion (five items; e.g. 'I feel used up at the end of the workday'), Cynicism (five items; e.g. 'I have become less enthusiastic about my work') and Professional Efficacy (which was not included in this study). All items are scored on a 7-point frequency rating scale ranging from '0' (never) to '6' (daily). High scores on the exhaustion and cynicism sub-scales are indicative of burnout. In the present study, we restrict ourselves to the exhaustion and cynicism dimensions of burnout. These two dimensions are generally considered as the 'core of burnout' (Green, Walkey & Taylor, 1991), whereas professional efficacy seems to reflect a personality characteristic rather than a genuine

burnout-component (Shirom, 1989, Cordes & Dougherty, 1993). Empirically, this is reflected by the relatively low correlation of professional efficacy with both of the other burnout dimensions (Lee & Ashforth, 1996) and by the fact that cynicism seems to develop in response to exhaustion, whereas professional efficacy seems to develop independently and in parallel (Leiter, 1993).

Psychosomatic health. Psychosomatic health complaints were measured with a Dutch questionnaire on subjective health (VOEG: Vragenlijst Onderzoek Ervaren Gezondheid [Questionnaire on Experienced Health]) developed by Dirken (1969). In this study, the 13-item version was used (Jansen & Sikkel, 1981), explaining 95% of the variance in the 21-item version. All items were scored on a 4-point scale ranging from '1' (seldom or never) to '4' (often). The VOEG consists of items asking whether one suffers from a range of psychosomatic complaints, such as headaches, backache, an upset stomach, fatigue, dizziness, and pain in the chest or heart area. The 13-item VOEG is used by the Dutch census office for monitoring psychosomatic health in the Dutch population

Negative Affectivity (NA). To assess NA, we used the PANAS scale developed by Watson, Clark and Tellegen (1988). The PANAS is designed to measure negative affectivity (NA) as well as positive affectivity (PA). However, the latter is not further considered in this study. NA is assessed by descriptors such as 'afraid, hostile, irritable, jittery, and upset'. Participant's indicated the extent to which they experienced the particular mood state in general on a 5-point scale ranging from 'very slightly or not at all' to 'extremely'. Extensive research has demonstrated the reliability and validity of instrument across a wide range of subjects (Watson, 1988). An innovation in the present research was not to ask the participants to rate their mood in life in general (as is done traditionally), but to ask participants to rate their mood specifically within the domains of work and home. Participants were asked how they felt in general at work and at home.

Marital Satisfaction. Marital satisfaction is measured by a scale used by Rusbult, Martz and Agnew (1998). This consists of five questions, such as "I feel satisfied with our relationship" and "My relationship is close to ideal". Respondents answered on a 9-point scale.

Turnover Intention. Intention to leave one's job was assessed by one question; "Do you intend to search for a new job in the short run (within a year) outside your

company?.” Participants indicated their score on a four-point scale, from absolutely not ‘1’ to definitely ‘4’.

4.4 Results

4.4.1 Data screening

Univariate data screening was carried out prior to undertaking statistical analyses for each of the independent and dependent variables, as recommended by Tabachnick and Fidell (1989). For each multivariate analysis, the assumptions of normality and homoscedasticity were checked and found to be satisfactory.

4.4.2 Sample Characteristics

The final sample consisted of 78 couples (all were male-female couples). Sixty-two percent of these dyads had children living at home. Within the IT professionals, 91% were male. Participants ranged in age from 28 to 75 years. Two individuals were over the ‘normal’ age of retirement (65 years); both were male, the 75 year old worked as an IT teacher ten hours per week and the 71 year old worked with his partner in their translation firm (but didn’t fill in amount of hours he worked). The mean age of the sample was 47.78 years ($sd = 7.9$ years) for IT professionals and a mean age of 46 years ($sd = 8.7$ years) for their partners. Average hours worked by IT professionals was significantly higher than their spouses (mean hours of IT workers = 43.39 hours, mean hours of their spouses = 29.55 hours, $t(154) = 7.60$, $p < .000$).

4.4.3 Descriptive Analysis

Table 4.1 shows the comparisons between the IT professionals and their partners across all the study variables. Significant differences were found for WHI only. WHI had a higher prevalence than HWI, and NA at home was higher than NA at work.

Table 4.1 Means and Standard deviations of Study Variables (N=78 couples)

Variable	Range	IT workers		Partners		t
		M	SD	M	SD	
WHI	0-3	0.88	0.37	0.64	0.39	3.94**
HWI	0-3	0.23	0.26	0.29	0.31	ns
NA for work	1-5	15.95	4.43	16.84	5.80	ns
NA for home	1-5	18.68	8.57	18.11	6.50	ns
Marital Satisfaction	1-9	7.12	1.66	7.13	1.62	ns
Health (VOEG)	1-4	1.47	0.40	1.59	0.43	ns
Exhaustion (MBI-GS)	0-6	1.88	1.27	1.61	1.03	ns
Cynicism (MBI-GS)	0-6	1.72	1.02	1.43	0.98	ns
Turnover Intention	1-4	1.75	0.82	1.78	0.83	ns

Note. ** $p < .01$, ns = not significant

Table 4.2 contains the intercorrelations and coefficient-alpha reliability estimates for the study variables. Reliability estimates were adequate except for HWI of the partner ($\alpha = 0.60$). Removal of items did not improve the estimate significantly, so the scale was left intact. Inspection of the table indicates that significant relationships for the same variable between IT worker and partner was only found for marital satisfaction ($r = .30$, $p < .01$).

Although not statistically significant, a positive relationship was found between worker's and partner's exhaustion ($r = .20$). Relationships between IT worker's and partner's stressors and strains indicated the following; HWI (IT worker) and exhaustion (partner, $r = .30$, $p < .01$), WHI (IT worker) and turnover intention (partner, $r = .27$, $p < .01$), HWI (IT worker) and turnover intention (partner, $r = .32$, $p < .01$), psychosomatic complaints (IT worker) and turnover intention (partner, $r = .27$, $p < .01$). Negative affectivity between the work and home domains were strongly correlated for both the IT worker and spouse ($r = .61$, $p < .01$, $r = .54$, $p < .01$, respectively), but not as strongly as expected.

Table 4.2 Correlations and Cronbach's alpha coefficients (N=78 couples)

	1	2	3	4	5	6	7	8	9
1 WHI (IT worker)	(.76)								
2 WHI (partner)	-.04	(.83)							
3 HWI (IT worker)	.39**	.22	(.70)						
4 HWI (partner)	-.15	.25*	-.03	(.60)					
5 NA in work (IT worker)	.33**	-.12	.31**	-.06	(.76)				
6 NA in work (partner)	-.04	.30**	-.12	.35**	-.10	(.85)			
7 NA at home (IT worker)	.29**	.03	.24*	.05	.61**	-.02	(.77)		
8 NA at home (partner)	.08	.10	-.06	.26*	-.10	.54**	.00	(.85)	
9 VOEG (IT worker)	.31**	-.12	.03	-.08	.41**	-.09	.28*	-.12	(.82)
10 VOEG (partner)	.17	.15	.21	.25*	.13	.27*	.07	.38**	.05
11 Exhaustion (IT worker)	.54**	-.10	.24*	-.19	.53**	.04	.39**	.16	.56*
12 Exhaustion (partner)	.21	.48**	.30**	.19	.00	.43**	-.00	.30**	.45**
13 Cynicism (IT worker)	.38**	-.08	.12	.03	.38**	-.16	.45**	.01	-.02
14 Cynicism (partner)	-.04	-.01	.00	.16	-.14	.15	-.01	.20	.16
15 Turnover Intention (IT worker)	-.08	.10	.03	.22	.35**	.13	.28*	-.02	-.07
16 Turnover Intention (partner)	.27*	.14	.32**	.12	.13	.14	-.01	.11	.27*
17 Marital Satisfaction (IT worker)	-.09	-.12	.02	.02	.08	-.13	-.24*	-.20	.07
18 Marital Satisfaction (partner)	.01	-.09	-.08	-.14	.19	-.06	-.02	-.19	.05



	10	11	12	13	14	15	16	17	18
10	VOEG (partner)	(.85)							
11	Exhaustion (IT worker)	.18	(.90)						
12	Exhaustion (partner)	.45**	.20	(.80)					
13	Cynicism (IT worker)	-.02	.56**	-.03	(.78)				
14	Cynicism (partner)	.16	.03	.28*	.04	(.76)			
15	Turnover Intention (IT worker)	-.07	.10	.03	.33**	.10			
16	Turnover Intention (partner)	.27*	.13	.23*	.05	.37*	.02		
17	Marital Satisfaction (IT worker)	-.02	-.12	-.12	-.16	-.17	.11	-.01	(.93)
18	Marital Satisfaction (partner)	.14	.02	-.13	-.07	-.24*	.14	-.06	.30** (.93)

Note: ** $p < .01$, * $p < .05$

4.4.4 Crossover

A series of hierarchical regressions were undertaken in which the order of entry of independent variables was controlled. In the first step, individual measures of affectivity were entered. Then the dependent variable was regressed on the WHI/HWI variables of the participant of interest and finally, in the third step the dependent variable was regressed on the WHI/HWI variables of the spouse of the dyad. In this way, crossover effects for each couple were assessed by regressing the outcomes on the WHI/HWI variables of their spouses. Good examples of the use of hierarchical regression technique to assess crossover can be found in Morrison and Clements (1997), and Hammer, Allen and Grigsby (1997). Table 4.3 and 4.4 shows the results of these analyses. Table 4.3 indicates that negative affectivity at work was a significant predictor for IT workers for their self-reported health complaints, exhaustion, and turnover intentions. NA at home predicted marital satisfaction, but NA at work indicated an unexpected relationship with marital satisfaction as well.

With regard to the first hypothesis, the WHI of IT professionals was a significant predictor of psychosomatic complaints, exhaustion and cynicism. Of note is the fact that, even after controlling for NA, WHI accounted for 5% ($p < .05$) of the variance in psychosomatic health complaints and 8% ($p < .01$) of variance in exhaustion levels. Partner WHI and HWI didn't predict any of the outcomes for IT workers and as such no evidence was found for Hypothesis 2 with regard to crossover of partners' stress to the strains of IT professional.

Analysis of table 4.4 indicates that NA had a less significant impact with regard to predicting outcomes with only partner NA at work predicting exhaustion and partner NA at home predicting psychosomatic complaints. With regard to hypothesis one, direct effects were found for the relationship between WHI and exhaustion. Again, it is noteworthy that even after controlling for NA, WHI accounted for 14% ($p < .01$) of the variance in exhaustion. Despite this, IT professionals' HWI was found to predict exhaustion and turnover intentions of their partners.

Table 4.3 Crossover from partner to IT worker (N=78 couples)

	Dependent Variables of IT worker				
	Health VOEG	Marital Satisfaction	Exhaustion MBI-GS	Cynicism MBI-GS	Turnover Intentions
	β	β	β	β	β
IT NA at work	.35*	.31*	.39**	.13	.38*
IT NA at home	.04	-.41**	.06	.31*	.10
Partner NA at work	.01	-.03	.05	-.22	.12
Partner NA at home	-.12	-.16	.19	.09	-.09
Step 1 R ² (R ² adj)	.18 (.14)	.16 (.11)	.37 (.33)	.28 (.22)	.17 (.12)
ΔR^2	.18**	.16*	.37**	.28**	.17*
F change	4.02**	3.25*	9.25**	6.29**	3.49*
WHI of IT worker	.27*	-.08	.36**	.29*	-.17
HWI of IT worker	-.19	.08	-.03	-.13	-.04
Step 2 R ² (R ² adj)	.25 (.19)	.16 (.09)	.46 (.42)	.32 (.26)	.20 (.13)
ΔR^2	.05*	.02	.08**	.04	.01
F change	3.25*	.276	8.46**	3.09	1.79
Partner WHI	-.02	-.09	-.02	-.00	.07
Partner HWI	.00	.12	-.18	.12	.18
Step 3 R ² (R ² adj)	.25 (.16)	.18 (.08)	.49 (.43)	.33 (.25)	.23 (.15)
ΔR^2	.03	.01	.01	.01	.02
F change	.00	.66	1.86	.58	1.47

Note: **p<.01, *p<.05

Table 4.4 Crossover from IT professional to partner (N=78 couples)

	Dependant Variables of Partner				
	Health VOEG	Marital Satisfaction	Exhaustion MBI-GS	Cynicism MBI-GS	Turnover Intentions
	β	β	β	β	β
Partner NA at work	.08	.09	.30*	.06	.12
Partner NA at home	.32*	-.17	.10	.14	.02
IT NA at work	.16	.32*	.05	-.19	.15
IT NA at home	-.11	-.17	-.14	.09	-.23
Step 1 R ² (R ² adj)	.18 (.14)	.09 (.05)	.19(.15)	.06 (.01)	.06 (.01)
ΔR^2	.18**	.09	.19**	.06	.06
F change	3.99**	1.89	4.50**	1.18	1.12
Partner WHI	.04	.00	.35**	-.11	.05
Partner HWI	.15	-.10	.03	.11	.12
Step 2 R ² (R ² adj)	.21 (.14)	.11 (.03)	.35 (.29)	.08 (.00)	.08 (.00)
ΔR^2	.00	.02	.14**	.01	.00
F change	1.15	.44	8.46**	.58	.89
WHI of IT worker	.09	.01	.17	-.03	.21
HWI of IT worker	.18	-.14	.22*	.09	.26*
Step 3 R ² (R ² adj)	.25 (.16)	.12 (.02)	.44 (.37)	.09 (.02)	.20 (.11)
ΔR^2	.02	.01	.08**	.02	.11**
F change	1.82	.55	5.12**	.25	5.24**

Note:**p<.01, *p<.05

This suggests that the interference that is experienced from home to work by IT professionals has a significant impact on the exhaustion and turnover intentions of their spouses. This is the clearest indication in the study that the interference experienced from work to home can have a crossover effect from a partner to their spouse. Taken together, our results provide evidence for the second hypothesis and suggest that there is crossover from IT workers stress (HWI) to the strains of their spouse (exhaustion, turnover intention).

Additional analysis. It has been shown that strain in one partner can produce an empathetic reaction in the other that increases his or her level of strain (Eckenrode & Gore, 1981; Riley & Eckenrode, 1986). In order to assess the strain of one person on their spouse, one additional analysis was computed whereby the partner's dependant variable was entered in step 3 of the regression analysis. Only marital satisfaction was a significant predictor ($\beta = .26$, $p < .01$), indicating that the marital satisfaction of one partner in the dyad was predictive of the other one.

4.5 Discussion

The central aim of the present study was the identification of crossover in a dyad where both partners worked. The present study is innovative in the literature on the transference of stress, in that only one other study (Morrison & Clements, 1997) has examined the relationship between partners' stress and spouses' strain, while controlling for the effects of negative affectivity and within-individual stress.

With regard to the first hypothesis the results are of significant note. For both IT professionals and their spouses, WHI remained a significant predictor of exhaustion after controlling for NA. This correlates with related research which has found a consistent relationship between WHI and exhaustion (Allen et al., 2000). Allen et al. (2000), in their exhaustive review of the WHI literature on outcomes, suggest that research should investigate if there are any underlying dispositional variables which explain the relationship between WHI and affective variables (such as job or life satisfaction). For IT professionals, NA did indicate a significant association with marital satisfaction (albeit in the opposite direction for NA at work). This result is in agreement with findings by Burke, Brief and George (1993) who found that individuals high in NA tended to report higher levels of WHI and lower levels of job and life satisfaction. However, the results of the present study suggest that the

influence of NA was not ubiquitous, as WHI still explained significant amounts of variance in psychosomatic complaints and exhaustion even after controlling for NA.

The fact that NA at work indicated a positive association with marital satisfaction needs to be addressed. This counterintuitive finding may represent the fact that NA at work may mobilise the spouse to increase support towards the partner and thus enhance feelings of marital satisfaction. In terms of future research, tapping NA in different domains will help to provide us with a more dynamic picture of affective processes. Considerable research evidence suggests that negative affectivity is stable across both time and place, but the results of the present research suggest that NA may be contextual across the domains of work and home. While the correlations were both strong and significant, the magnitude of the association was not so strong as to suggest that NA was stable across both domains. Future research should distinguish between these domains, in terms of affectivity, in an effort to further understand the processes that cause NA to be contextualised.

Limited support was found for the second hypothesis. Consistent with previous studies (e.g., Jones & Fletcher, 1993; Morrison & Clements, 1997) support was found for the crossover of stress from one partner to the strains of their spouse. The finding that the HWI of IT professionals affects the exhaustion levels and turnover intentions of their spouses suggests that as IT professionals experience interference from the home domain to the work domain, they 'pass' on this stress to their spouses. In terms of a the conceptualisation of a causal path, this probably suggests when IT workers experience stress in the form of home interfering with work (i.e., they are called upon to share a heavier degree of burden in the home domain, while still trying to accommodate the level of demands at work), such interference leads to increased exhaustion at work and withdrawal (as indicated by turnover intentions) for their spouse. In the present study, the fact that a high correlation was found between NA at home for the IT workers and NA at work for their spouse adds further weight to such an interpretation. This result is consistent with Pearlin and Turner (1987) findings that spouses were sensitive to the stress of their partner (even when their partner didn't refer to it). Given that the majority of partners in this study were women, the result is also consistent with the idea that women are more susceptible than men to the impact of stressors affecting their partners (Haviland & Malatesta, 1981; Kessler, 1979; Kessler & McLeod, 1984). The fact that IT professionals level of WHI indicated significant associations with psychosomatic

complaints, exhaustion and cynicism further suggest that a heavier burden from home has a ‘knock on’ effect in the work domain. Additional analysis, whereby the dependent variables of the spouse were entered into the last step of the regression model indicated crossover of marital satisfaction.

4.5.1 Potential crossover mechanisms

At the level of crossover mechanism, the literature on contagion (Hatfield et al., 1994) provides a nice way of conceptualising how the stressor of one partner can crossover to their spouse. Indeed, Bakker and Schaufeli (2000), in a study of Dutch high school teachers, found that the positive or healthy effects of interactions with colleagues turned into a negative or unhealthy effect when teachers talked frequently with burnout colleagues. It is not unreasonable to imagine that interactions within the personal realm of a couple are even more intense and frequent. It is possible to conceptualise that the process of stress crossing over from one partner to another is similar to the processes involved in emotional contagion. Emotional contagion is defined as “the tendency to automatically mimic and synchronise facial expressions, vocalisations, postures and movements with those of another person and consequently, to converge emotionally” (Hatfield, Cacioppo, & Rapson, 1994; p. 5). In terms of crossover via partners, contagion (or crossover) may occur via a conscious cognitive process by “tuning in” to the emotions of others. More specifically, such tuning in can be thought of as empathy or perspective taking, which is the “spontaneous tendency of a person to adopt the psychological perspective of other people- to entertain the point of view of others” (Davis, 1983, p. 169). Empirical evidence for such a finding has been found in the longitudinal study of Bakker, Dierendonck & Schaufeli (in press), who found that empathy made caregivers more vulnerable to burnout. Taken together, both emotional contagion and empathy provide the conceptual framework by which we can understand the mechanisms of crossover in future studies.

4.5.2 Limitations

Although the present study revealed important crossover effects in the dual-earner families studied, lack of information made it impossible to calculate a response rate. Such an issue raises questions concerning the characteristics of the individuals who did not respond to the survey. This could suggest that those with the greatest stressors did not respond because they experienced too many demands (Hochschild,



1989). Our response rate was probably affected by the fact that privacy considerations meant that our contact with the spouse of the IT professional was mediated by the IT professional. Therefore, the IT professional could choose not to respond (for both him/her and their spouse). Unfortunately, we have no way to verify this empirically. However, indirect evidence may be suggested by the fact that crossover effects were found from IT worker stressors to partner strains, but not vice-versa. A similar result was found by Jones and Fletcher (1993) who found a crossover effect of men's job demands on women's psychological health, but no effect of women's job demands on men's psychological health. In the Jones and Fletcher (1993) study, wives did not report high levels of job stress, and in the present study, partners report lower levels of burnout, suggesting that the partners may have had less demanding jobs. Alternatively, it may reflect the fact that partners worked (on average) less hours than their spouses.

Reliance on data that is self-report, subjective and cross-sectional carries long recognised limitations. Future research should use methods such as experience sampling (Williams & Alliger, 1994) to better understand the dynamics of WHI/HWI and crossover. Such an approach could help to address the point raised by Westman (2001) as to whether crossover might lead people to redefine their roles at work and at home, thereby altering their perceived role processes.

A big advantage of crossover research is that it is based on an observation of two partners, and as such confounding can be avoided by controlling for each partner's stress. The present study advances the knowledge in the field by demonstrating how stressors and strains experienced by one partner can be associated with strain in their spouse. The most important conclusion of the study may be that interference from home to work is more than a problem for the individual concerned; it can also effect one's partner/spouse. Additionally, such a result for HWI is in contrast to idea that WHI is the most potent aspect of the work-home nexus.

Chapter 5 Is Work-Home Interference a Predictor or Outcome of Burnout and Engagement?⁸

5.1 Abstract

This paper describes a two-wave panel study that was carried out to examine reciprocal relationships of job demands/resources and Work-Home Interference (WHI) with job burnout and job engagement. Specifically, a job demands and job resources model was examined separately to investigate the causal role of WHI. Hypotheses were tested in a sample of 193 employees from a pension fund company, using SEM. Participants filled out the questionnaire twice, with a two-year time lag in-between. The results primarily showed that Time 1 job demands were causally related to WHI-negative and burnout at Time 2. Furthermore, reversed causal effects were found for engagement at Time 1, which was causally related to WHI-positive at Time 2. The mediational effect of WHI was also tested. WHI-positive at Time 2 was found to mediate between job resources at Time 1 and Engagement at Time 2. Conclusions and implications are discussed in relation to the WHI literature.

5.2 Introduction

Ample evidence attests to the fact that the interaction of work and home (or non-work) presents challenging problems to individuals (Allen, Herst, Bruck, & Sutton, 2000; Kossek & Ozeki, 1998). It has been established that both work and home demands are potentially stressful (Cooper, Dewe & O’Driscoll, 2001). The emotional, physical, and mental demands of roles within either domain may exceed an individual’s resources. Indeed, interference between work and home responsibilities has been associated with adverse psychological and physical outcomes for employees (Frone, 2000; Greenhaus & Parasuraman, 1986) and their families (Frone, Russell, & Cooper, 1992, 1997). While the importance of such interference has been established, one central concern has limited a growing body of knowledge. This concern relates to the temporal ordering of Work-Home Interference (WHI) and individual psychological functioning (Kelloway, Gottlieb & Barnham, 1999). Most of the existing literature on WHI has relied on cross-sectional data, thereby prohibiting the assessment of causal relationships. A need for longitudinal research in the job stress

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area is noted by Zapf, Dormann and Frese (1996), who suggest that examples of good longitudinal studies and/or sophisticated statistical models (e.g., covariance structure models) on job characteristics and job stress are scarce. The present study will help to address this deficiency by testing and evaluating the direction of relationships between job demands/resources, WHI and burnout/engagement.

5.2.1 Theoretical and Empirical Background

Work-Home Interference (WHI) is experienced negatively 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), and positively when positive experiences from one role make it easier or enhance participation in the other role (e.g., Grzywacz & Marks, 2000). Theoretically, WHI research has been dominated by the role strain perspective, which suggests that the responsibilities from both domains compete for limited amounts of time and energy (role scarcity hypothesis; Greenhaus & Beutell, 1985). A parallel, but opposite, body of theory to the role strain approach suggests that participation in multiple roles provides a greater number of opportunities and resources to the individual that can be used to promote growth and better functioning in other life domains (role expansion hypothesis; Marks & MacDermid, 1996; Sieber, 1974). Therefore, despite a large focus in the literature on interference or conflict, separate but related bodies of research suggest that work can benefit home life (e.g., via work skills generalizing to the home environment). Indeed, Grzywacz and Marks (2000), using data from a large national survey in the US, showed that positive spillover was related to factors that facilitated development (e.g., decision latitude, family support). Such evidence means that any attempt to measure a balanced picture of work and home needs to account for positive aspects as well.

The need to build a more balanced picture of the stress process and to account for ‘positive’ interference can also be seen in the recent Job Demands-Resources (JD-R) model (Bakker, Demerouti, De Boer & Schaufeli, in press; Demerouti, Bakker, Nachreiner & Schaufeli, 2001). Theoretically speaking, the JD-R model assumes two processes: (1) a stress (or energy depletion) process of overtaxing and wearing out in which high job demands exhaust the employee’s energy backup; (2) a motivational process in which resources help to deal effectively with high job demands and foster mental engagement. The model is concerned with the development of burnout and



makes a good case for the antecedents of stress outcomes to be rooted in the combination of high demands and poor resources. In the present research, the JD-R model is the theoretical background to how demands can influence burnout and resources can influence engagement. Recently, Schaufeli and Bakker (2002), using data from four occupational samples (N = 1,698), tested the JD-R model and found that burnout was predominately predicted by job demands, whereas engagement was exclusively predicted by job resources, suggesting two different pathways.

It follows logically that WHI is rooted in the interference caused by having too many demands and not enough resources, and consistently, that such interference can exacerbate feelings of burnout. Research examining the relation between WHI and burnout has yielded consistent and significant support for these hypotheses (see the recent meta-analysis by Allen et al., 2000). This study builds on earlier cross-sectional studies that have found empirical support for the influence of job characteristics on work-related psychological well-being and what prominent theoretical models have postulated to be the causal ordering among job characteristics and outcomes (see Bakker et al., in press, Demerouti et al, 2001; Karasek & Theorell, 1990; Siegrist, 1998). In addition, it builds on the existing cross-sectional evidence regarding the role of WHI as a mediator between job demands/resources and outcomes (Geurts, Rutte & Peeters, 1999; Kinnunen & Mauno, 1998; Montgomery, Peeters, Schaufeli & Den Ouden, in press; Parasuraman, Purohit & Godschalk, 1996). Given that Schaufeli and Bakker (2002) found that job demands influence burnout and that job resources influence engagement in relatively independent ways, it was decided to examine the role of WHI in a job-demands/burnout and in a job resources/engagement model separately (see Figure 5.1). In addition, parsimony dictated that examining demands and resources in separate models would be the most effective approach in terms of simplifying conceptualization, detecting causality, and statistical considerations with regard to estimating overly complex models.

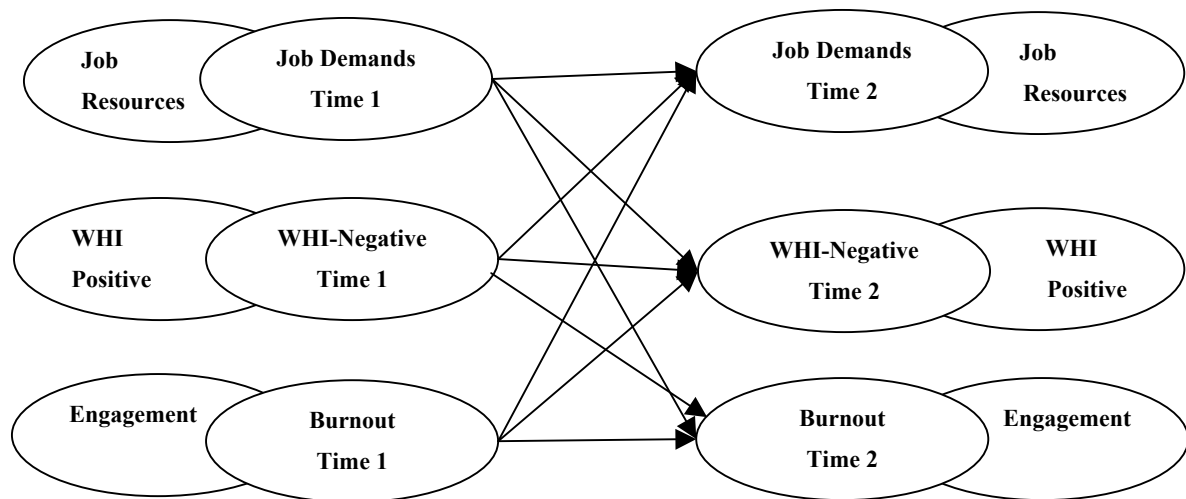


Figure 5.1 Job demands/resources model

Such an approach allows us to generate clear and testable hypotheses.

5.2.2 Job Demands

Traditional job stress models (e.g., the Demand-Control-Support (DCS) model; Karasek & Theorell, 1990) have not adequately attended to the potentially multifaceted nature of job demands (with the exception of De Jonge, Mulder & Nijhuis, 1999; Söderfeldt et al., 1997). In our view, a more comprehensive picture of job demands will be ascertained by also evaluating emotional and mental demands. Although rarely studied, some studies have demonstrated both emotional demands (Le Blanc, Bakker, Peeters, Van Heesch & Schaufeli, 2001; Pekrun & Frese, 1992) and mental demands (Cooper & Kelly, 1984; Kahn & Boysoiere, 1992) as important antecedents of job stress. In the present study, job demands will be operationalised by three sub-scales; quantitative job demands, emotional job demands and mental job demands. Quantitative job demands or work pressure refers to a situation where a person has too much work to do and too little time to do it in (e.g., meeting deadlines); emotional job demands refer to the extent to which one's work puts one in emotionally stressful situations (e.g., difficult clients or colleagues); and mental demands refers to the degree to which work tasks call upon you to expend sustained mental effort in carrying out your duties (e.g., continuous concentration on a single task). The general definition of demands employed refers to the extent to which the working environment contains stimuli that require some effort (Jones & Fletcher, 1996), and encapsulates the idea that job demands lead to negative consequences if

they require additional effort beyond the usual way of achieving the work goals (see Demerouti et al., 2001).

5.2.3 Job Resources

The present study examines a range of job resources as well, namely support, supervisory coaching, communication and control. From Rapoport and Rapoport's (1971) early identification of the facilitating husband to the more recent assertions regarding the importance of family-responsive employers (Friedman, 1990), support and coaching have been viewed as significant resources that can promote effective coping and enhance employee well-being in the face of work-family stress (Repetti, 1989; Thomas & Ganster, 1995; Weiss, 1990).

Traditionally, WHI has been studied as a negative experience (Greenhaus, 1989), but the idea of positive spillover has rarely been studied. Piotrkowski (1978), in a study of male employees, found that husbands' who enjoyed their work and experienced feelings of self-enhancement from the working day, came home cheerful and emotionally available to their families. Additionally, Grzymacz and Marks (2000) found that those factors that facilitated development (e.g., decision latitude, support) were associated less with negative spillover and more with positive spillover between work and home. This suggests that the effects of resources at work can be gauged best by looking at positive (as opposed to negative) spillover. Theoretically, assessing both allows us to examine both the scarcity and enhancement hypotheses.

The aforementioned empirical and conceptual evidence leads to the conclusion that job resources are important antecedents of WHI-positive. The role of social support has been well established as such an antecedent. In addition to support, job flexibility or control (Hammer, Allen & Grigsby, 1997; Marshall & Barnett, 1994) and communication with colleagues (Swanson, Power & Simpson, 1998) have been significantly associated with WHI-positive. Job flexibility or control is a resource that is critical to better work-home integration. Through alternative work arrangements, employers furnish the time and flexibility employees need to juggle work and home responsibilities (Friedman & Greenhaus, 2000). Communication with colleagues helps to provide the information and advice that comes from networking and feeling accepted by colleagues within an organization. Therefore, in the present study, job resources will be operationalised by four sub-scales: social support, supervisory coaching, control and communication.



5.2.4 Burnout and Engagement

Burnout, referring to the draining of energy and resources caused by chronic job stress is considered a work-related indicator of psychological health (Cooper, Dewe & O'Driscoll, 2001). In the present study, we restrict ourselves to the exhaustion and cynicism dimensions of burnout. These two dimensions are generally considered as the 'core of burnout' (Green, Walkey & Taylor, 1991), whereas several scholars have argued that professional efficacy reflects a personality characteristic rather than a genuine burnout-component (Cordes & Dougherty, 1993; Shirom, 1989). Empirically, this is reflected by the relatively low correlation of professional efficacy with both of the other burnout dimensions (Lee & Ashforth, 1996), and by the fact that cynicism seems to develop in response to exhaustion, whereas professional efficacy seems to develop independently and in parallel (Leiter, 1993).

Engagement is a relatively new addition to the occupational field and should be viewed as part of a more general emerging trend towards a 'positive psychology' that focuses on human strengths and optimal functioning rather than on weaknesses and malfunctioning (Seligman & Csikszentmihalyi, 2000). Theoretically, Schaufeli and Bakker (2002) have identified two underlying dimensions of work-related well-being that encompass the burnout and engagement constructs: (1) activation, ranging from exhaustion to vigor, and (2) identification, ranging from cynicism to dedication. Thus, burnout is characterised by a combination of exhaustion (low activation) and cynicism (low identification), whereas engagement is characterised by vigor (high activation) and dedication (high identification). As such, Schaufeli, Salanova, Gonzalez-Roma and Bakker (2002) argue that engagement is not adequately measured by the opposite profile of burnout scores, and suggest that burnout and engagement are opposite concepts that should be measured independently and with different instruments.

Accordingly, in the present research, engagement will be operationalised as vigour and dedication. In addition, the third component, absorption, will also be measured. Absorption is characterised by being fully concentrated and happily engrossed in one's work, whereby time passes quickly and one has difficulties with detaching oneself from work (Schaufeli et al., 2002). Absorption was found to be a relevant aspect of engagement after some 30 in-depth interviews were carried out (Schaufeli et al., 2001). Engaged employees are assumed to have a sense of energetic



and effective connection with their work activities and are characterised by a sense of significance, enthusiasm, inspiration, pride, and challenge. In addition, they are deeply engrossed in their work. Within the framework of WHI, it is plausible that positive interference may lead to feelings of engagement in employees (positive spillover).

5.2.5 Direction of WHI

The available literature on WHI has mainly been based on cross-sectional data and the implicit assumptions in such models is that work and home constitute a potential stressor that leads to various forms of psychological and behavioural strain. However, it has also been suggested that WHI may be an outcome rather than a predictor of strain (Higginbottom, Barling & Kelloway, 1993; Kelloway & Barling, 1994). In their review of longitudinal studies, Zapf, Dormann and Frese (1996) located six out of sixteen longitudinal studies on organizational stress, which tested and provided evidence for reversed causality. More recent studies provide additional evidence. For example, reversed causal effects have been between financial prospects and health (Gorgievsky-Duijvesteijn, Giessen, & Bakker, 2000; Gorgievski-Duijvesteijn, Bakker, Schaufeli, & Van der Heijden, 2002), and between job characteristics (like job complexity, job pressure, social support and boundary spanning) and exhaustion or satisfaction (Demerouti, Bakker & Bulters, in press; Houkes, Janssen, De Jonge & Bakker, 2003; James & Tetrick, 1986; Wong, Hui, & Law, 1998). In general, results suggest that stress and reduced motivation or dissatisfaction can be outcomes and predictors of job demands and resources, such that higher stress and impaired motivation results over time in less favorable working conditions. Moreover, the evidence for reversed causal effects has been found in studies using time lags of five and even ten years of time (Bakker, Schaufeli, Sixma, Bosveld, & Van Dierendonck, 2000; Gorgievsky-Duijvesteijn et al., 2000). As previously mentioned, engagement can be considered to be the opposite of burnout (Schaufeli et al., 2002), so it is logical that similar, but reversed effects should be postulated for our resources model.

5.2.6 Hypotheses

Demands Model

- *Hypothesis 1: Time 1 job demands increase Time 2 WHI-negative and burnout (causality model).*



- *Hypothesis 2: Time 1 WHI-negative and burnout increase Time 2 job demands, and Time 1 burnout increases Time 2 WHI-negative (reversed causality model).*

Resources Model

- *Hypothesis 3: Time 1 job resources increase Time 2 WHI-positive and engagement (causality model).*
- *Hypothesis 4: Time 1 WHI-positive and engagement increase Time 2 job resources, and Time 1 engagement increases Time 2 WHI-positive (reversed causality model).*

5.2.7 Mediation Analysis

A major component of theory design and development is the concept of mediation (Brown, 1997). The role of WHI as a mediator has been suggested by various studies (Bakker & Geurts, in press; Frone et al., 1992; Geurts, Rutte & Peeters, 1999; Kinnunen & Mauno, 1998; Parasuraman, Purohit, Godschalk & Beutell 1996; Stephens, Franks, & Atienza, 1997). The basic idea of mediation is that a mediating variable should account for the relationship between the predictor and criterion (in statistical terms). However, Baron and Kenny (1986) note that because most phenomena in psychology have multiple causes, a more realistic goal may be to seek mediators that significantly decrease the strength of the relationship between predictor and criterion. However, a review of the literature indicates that studies have not done an adequate job in either assessing mediation or distinguishing between full and partial mediation (Brown, 1997; Holmbeck, 1997). It is important to distinguish between full and partial mediation, as there are strong grounds for believing that WHI may only play a partially mediating role.

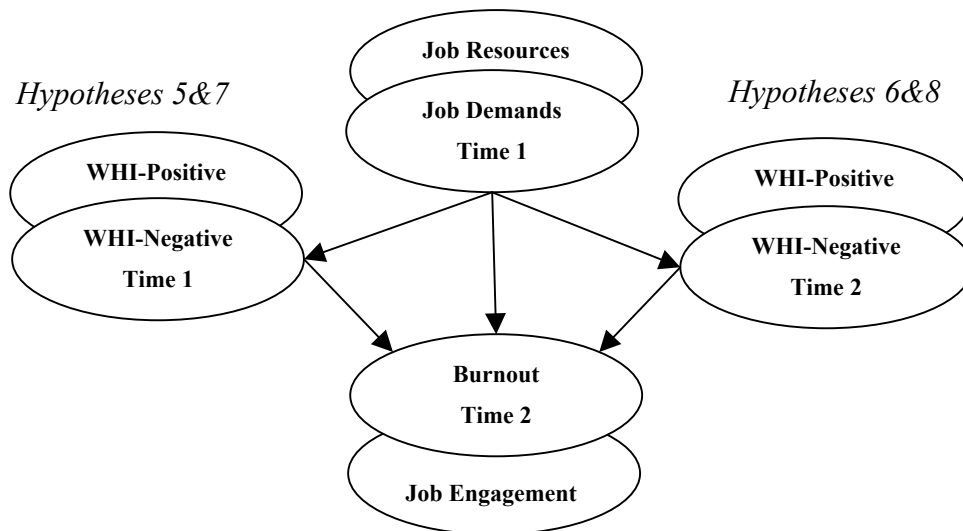


Figure 5.2 Rival hypotheses for the mediation of WHI

Firstly, given the fact that some job demands are contextual (e.g., dealing with colleagues/supervisors at the workplace, conducting oneself in a professional manner) it is less likely that all job demands will interfere with home. Secondly, there is accumulating evidence to suggest that job demands have a strong and direct relationship with outcomes such as burnout (see meta-analysis of Lee & Ashforth, 1996). Thirdly, anthropological studies of the way that people separate work and home suggest that some people separate and compartmentalise aspects of their work and home domains (Nippert-Eng, 1996), arranging their lives so that aspects of one domain do not interfere with the other.

The present research provides the opportunity to examine rival hypotheses regarding the ability of Time 1 and Time 2 WHI (see Figure 5.2) to mediate the relationship between work antecedents (demands, resources) and outcomes (burnout, engagement). Theoretically, it is plausible that WHI at both Time 1 and Time 2 could mediate the relationship between predictor and criterion (see Figure 5.2). Such a relationship is dependent on the time it takes for job demands to produce WHI-negative, and for the accumulation of positive job resources to lead to WHI-positive. In terms of conceptualizing time models of stress effects, Frese and Zapf (1988) make a distinction between the initial impact and the exposure time effect.

In general terms, the initial impact effect is based on the idea that people have an initial reaction to a new stressor, a kind of ‘reality shock’. The initial impact concept implies that the measurement points are relatively near to each other. Although Frese and Zapf (1988) suggested that this would be a couple of months

apart, for the purposes of this study, we conceptualise Time 1 WHI to represent the initial impact time. Additionally, the exposure time effect assumes implicitly that the longer a stressor impacts on the person, the more intense should be the effect. In the present study, WHI at time 2 will represent the exposure time effect.

Demands Model

- *Hypothesis 5: Time 1 WHI-negative mediates the relationship between Time 1 Job demands and Time 2 burnout (initial impact effect)*
- *Hypothesis 6: Time 2 WHI-negative mediates the relationship between Time 1 Job demands and Time 2 burnout (exposure time effect).*

Resources Model

- *Hypothesis 7: Time 1 WHI-positive mediates the relationship between Time 1 Job resources and Time 2 engagement (initial impact effect).*
- *Hypothesis 8: Time 2 WHI-positive mediates the relationship between Time 1 Job resources and Time 2 engagement (exposure time effect).*

5.3 Method

5.3.1 Participants and Procedure

A full panel design with two waves was conducted. Participants supplied data at two time points, with a two-year interval between the two time points. This interval is long enough for possible changes to occur, but not too long for too much non-response to occur (Frese & Zapf, 1988). Additionally, a two-year time lag allowed us to even out the effects of seasonal fluctuations.

Initially, 611 employees of a pension fund company were mailed questionnaires and invited to take part in the study. The main activities of the employees in this organization were to collect premiums, to administrate and to pay out monthly allowances and pensions. At Time 1, 507 employees responded to the survey (response = 83%). At Time 2, 486 employees responded to the survey (response rate = 80%). All analyses are based on 193 participants for whom complete data sets are available from both time points (32%). Since participation in the study was on an anonymous basis, participants' responses to questionnaire 1 were related to those on questionnaire 2 by using their unique demographic information. With regard to this final sample for analysis, 61% were male. The mean age of the sample was 35 years ($sd = 8.0$), 13% has a supervisory position. No gender difference for WHI-negative was found, but females reported higher levels of WHI-positive at Time 1, ($t(190) = 2.97, p < .01$).

Analysis between the initial sample ($N = 507$) and Time 1 data of the panel group ($N = 193$) indicated that the two groups did not significantly differ on the following variables: gender ratio, mean age, percentage of respondents who held a supervisory position, and the model variables, with one exception. The only difference found indicated that the initial sample ($N = 507$) reported higher levels of cynicism, ($t(698) = 2.26, p < .05$). Taken together, these results suggest that the panelgroup can be assumed to be representative of the initial sample.

5.3.2 Measures

Work-Home Interference (WHI). WHI-negative and WHI-positive were measured using items from the Survey Work-Home Interference Nijmegen (SWING; Wagena & Geurts, 2000). WHI-negative, referring to the negative impact of the work situation on one's functioning at home (e.g., "your work schedule makes it difficult



for you to fulfill your domestic obligations”) was measured by three items. WHI-positive, referring to a positive impact of the work situation on one’s functioning at home (e.g., “you come home cheerfully after a successful day at work, positively affecting the atmosphere at home”) was measured by two items. All items are scored on a 4-point scale from ‘1’ (never) to ‘4’ (always). The internal consistencies (Cronbach’s alpha’s) of all scales are displayed in Table 5.1.

Burnout. The Maslach Burnout Inventory-General Survey (MBI-GS) was used to assess burnout (Schaufeli, Leiter, Maslach, & Jackson, 1996). The MBI-GS includes the two sub-scales used in the present study: Exhaustion (five items; e.g., ‘I feel used up at the end of the workday’), and Cynicism (five items; e.g., ‘I have become less enthusiastic about my work’). All items are scored on a 7-point frequency scale ranging from ‘0’ (never) to ‘6’ (daily). High scores on the exhaustion and cynicism sub-scales are indicative of burnout.

Engagement. Engagement was measured with items reflecting three underlying dimensions (Schaufeli et al., 2002): Vigour (5 items; e.g., ‘when I get up in the morning, I feel like going to work’), Dedication (5 items; e.g., ‘I’m enthusiastic about my job’) and Absorption (7 items; e.g., ‘When I’m working, I forget everything around me’). Engagement scales are similarly scored in the same way as the MBI-GS.

Job demands. Three types of job demands were included: quantitative (i.e. work pressure), emotional, and mental demands. Work pressure was assessed with a three-item scale developed by Bakker, Demerouti, Schaufeli, Taris and Schreurs (in press). The items refer to quantitative, demanding aspects of the job (time pressure, working hard); e.g. ‘My job requires working very hard’. Items were scored on a four-point frequency scale, ranging from 1 (‘never’) to 4 (‘always’).

Emotional demands were assessed utilising a three-item scale from the emotional demands scale developed by Van Veldhoven and Meijman (1994; see also Van Veldhoven, De Jonge, Broersen, Kompier & Meijman, in press). An example item is: ‘Is your work emotionally demanding?’. Items were scored in a similar way as the previous scale.

Mental demands were assessed by a four-item scale developed by the researchers and comparable with the mental demands scale of the Dutch Questionnaire on the experience and evaluation of work (Van Veldhoven & Meijman, 1994). An example item is; ‘Do you have to do many things at the same time at

work?'. Items were scored in a similar way to the workload and emotional demands scales.

Job resources. Four job resources were included in the questionnaire. Control was assessed with a Dutch version (Furda, 1995) of Karasek's (1985) job content instrument. It includes four items concerning decision authority (i.e., freedom of action in accomplishing the formal work task). A sample item is: "I can decide myself how I execute my work". Items were scored on a four-point frequency scale, ranging from 1 ('never') to 4 ('always'). Social support was measured with a four-item scale developed by Van Veldhoven and Meijman (1994). A sample item is: 'Can you ask your colleagues for help if necessary?'. Items were scored in a similar way as the previous scale (see also Van Veldhoven et al., in press). Supervisory coaching was measured using a seven item scale which was a Dutch adaptation of Graen and Uhl-Bien's (1991) Leader-Member exchange scale (Le Blanc, 1994); e.g., 'My supervisor uses his/her influence to help me solve my problems at work'. Items were scored in a similar way as both previous scales. Communication was measured with a self-constructed seven-item scale. An example item is: "The communication between the different departments of my company is good" (1 = totally disagree, 5 = totally agree).

5.3.3 Strategy of Analyses

The data analysis procedure adopted was based on the work of De Jonge et al. (2001) and Pitts, West and Tein (1996). Covariance structural modeling (Jöreskog & Sorböm, 1993) was performed in order to analyze the panel data. Due to the large numbers of items used to operationalise all the variables, simultaneous consideration of all observed variables would result in unreliable parameter estimates and insufficient power (Bentler & Chou, 1987; Jaccard & Wan, 1996). Therefore, each of the components of both the job demands and job resources models were included in the structural equation analyses as a latent variable. Furthermore, a two-step approach was followed (Anderson & Gerbing, 1988), with initially the measurement models tested, and following this structure equation models are tested. All measurement models were examined for invariance over time (stationarity) and invariance within time (tau equivalence). All measurement models satisfied the criteria for stationarity but not for tau equivalence (results can be obtained from the first author). According to Pitts et al. (1996), establishing stationarity is considered adequate to make meaningful inferences about longitudinal relationships.

Using structural equation modelling may lead to a slightly complex variant of the general panel model (e.g., Finkel, 1995). By means of a cross-lagged structural model (see Figures 5.1 and 5.2), a number of competing structural equation models were fitted to the data in several steps. First of all, a job demands model without cross-lagged structural paths but with temporal stabilities (model M1) was specified. Second, this so-called “stability model” was compared with three more complex models that were nearest in likelihood to the hypothesized structural model:

1. Causal Model: A model with cross-lagged structural paths from Time 1 job demands to Time 2 WHI-negative and burnout.
2. Reversed Causal Model: A model with cross-lagged structural paths from Time 1 WHI-negative and burnout to Time 2 job demands.
3. Reciprocal Model: A model with both cross-lagged structural paths representing reciprocal effects.

Similarly, a job resources model was tested in the same systematic fashion. First of all, the model without cross-lagged structural paths but with temporal stabilities was specified. Second, this stability model was compared with three more complex models that were nearest in likelihood to the hypothesized structural model:

1. Causal Model: A model with cross-lagged structural paths from Time 1 job resources to Time 2 WHI-positive and engagement.
2. Reversed Causal Model: A model with cross-lagged structural paths from Time 1 WHI-positive and engagement to Time 2 job resources.
3. Reciprocal Model: A model with both cross-lagged structural paths representing reciprocal effects.

Analysis of the modification indices for our stability model indicated that the model would be improved by reducing the amount of parameters to be estimated. Therefore, it was decided to use single indicators for the WHI-negative and WHI-positive latent variables. Given this decision, we corrected for random measurement error by setting the random error variance associated with each construct equal to the product of its variance and the quantity one minus its estimated reliability (Bollen,

1989). This approach has been used in several other studies (Bacharach, Bamberger & Conley, 1991; Frone, Russell & Cooper, 1992; Wayne & Ferris, 1990).

5.4 Results

5.4.1 Data screening

Prior to the AMOS analyses, the means, standard deviations, coefficient alphas and Pearson correlations were computed (see Tables 5.1 and 5.2). All measurement instruments used had a Cronbach's alpha coefficients equal to or higher than .70. Table 5.1 indicates mean differences between Time 1 and Time 2. Results show that mean cynicism levels decreased and mean engagement levels increased between the two years. In a similar vein, mean work pressure and WHI Positive decreased, and mean levels of control increased. Table 5.2 shows that the zero order correlations of corresponding variables between Time 1 and Time 2 variables were all significant and consistent with our theoretical expectations.

5.4.2 Model Comparisons

Our first hypothesis was that Time 1 job demands increase Time 2 WHI-negative and burnout.

Table 5.1 Means, standard deviations (SD) and coefficient alphas

Variable	Time 1			Time 2			t
	α	M	SD	α	M	SD	
WHI Negative	.74	1.73	.63	.71	1.84	.59	ns
WHI Positive	.79	2.72	.97	.85	2.51	.87	2.24 ^a
Emotional Demands	.84	1.87	.60	.79	1.95	.64	ns
Mental Demands	.75	3.11	.48	.76	3.04	.49	ns
Work Pressure	.84	2.80	.59	.80	2.59	.58	3.53 ^c
Coaching	.89	3.02	.96	.87	2.97	.95	ns
Control	.72	2.78	.53	.79	2.95	.50	3.24 ^b
Social Support	.73	3.83	.67	.79	3.71	.75	ns
Communication	.78	2.87	.61	.67	2.93	.50	ns
Exhaustion	.85	1.56	.93	.87	1.45	1.03	ns
Cynicism	.71	1.24	.92	.80	0.96	.88	3.06 ^b
Vigor	.70	4.04	1.43	.86	4.65	1.06	4.76 ^c
Dedication	.79	4.01	1.18	.88	4.80	1.07	6.89 ^c
Absorption	.81	3.64	1.08	.78	4.25	1.23	5.18 ^c

Note. α = Cronbach's alpha; ns = not significant. ^a $p < .05$, ^b $p < .01$, ^c $p < .001$

Table 5.3 presents the results for competing versions of the job demands model. The chi-square difference test (Bentler & Bonnett, 1980; Jöreskog & Sorböm, 1993) revealed significant differences between the stability model and the causal model (M1 versus M2: $\Delta \chi^2 (3) = 14.09, p < .01$); the unconstrained model with cross-lagged effects better accounted for the data than the stability model. Thus support was found for Hypothesis 1, indicating that Time 1 job demands influence Time 2 WHI-negative and burnout.

The chi-square difference test between the stability model and the reversed causal model was significant as well (M1 versus M3: $\Delta \chi^2 (3) = 11.57, p < .05$). Thus, support was found for Hypothesis 2, indicating that Time 1 WHI-negative and burnout increased Time 2 job demands. Furthermore, the chi-square difference test revealed significant differences between the stability model and the reciprocal model (M1 versus M4: $\Delta \chi^2 (6) = 19.44, p \leq .01$). However, the difference between the causal model and the reciprocal model was non-significant, suggesting that the addition of extra paths did not improve the fit of the model. So, the simpler causal model indicated relatively better fit indices than the competing models (i.e. AGFI = .89, RMSEA = .07, NNFI = .91, ECVI = .76), according to the criteria suggested by Hu and Bentler (1998) or by Schumaker and Lomax (1996). In addition to this, Browne and Cudeck (1989, 1993) have suggested that the cross-validation index (ECVI) can be used to assess the robustness of the ultimate model, when it is undesirable to split data into two (or more) sub-samples. The ECVI index for Model M2 (ECVI = .76) is lower than the ECVIs for all the other lagged models. Therefore, the causal model seems to be the most stable and most parsimonious model.

Table 5.2 Pearson correlations of the study variables

	1	2	3	4	5	6	7	8	9
1 WHI Negative (1)									
2 WHI Positive (1)	-.02								
3 Emotional Demands (1)	.39**	-.01							
4 Mental Demands (1)	.22**	.05	.14						
5 Work Pressure (1)	.30**	-.08	.31**	.47**					
6 Coaching (1)	-.05	.38**	-.12	.03	-.11				
7 Control (1)	.07	.31**	.06	.06	.01	.42**			
8 Social Support (1)	-.14	.33**	-.21**	.11	-.07	.29**	.09		
9 Communication (1)	-.23**	.21**	-.39**	-.00	-.28**	.29**	.08	.30**	
10 Exhaustion (1)	.44**	-.16*	.30**	.17*	.19**	-.08	-.08	-.25**	-.20**
11 Cynicism (1)	.17**	-.19**	.23**	-.14	.08	-.38**	-.28**	-.33**	-.24**
12 Vigour (1)	-.02	.10	-.08	.08	.07	.25**	.26**	.21**	.17*
13 Dedication (1)	.04	.33**	.06	.20**	.14*	.40**	.43**	.30**	.13
14 Absorption (1))	.13	.33**	.05	.18*	.13	.36**	.34**	.26**	.19*

		1	2	3	4	5	6	7	8	9
15	WHI Negative (2)	.54**	-.03	.24**	.05	.09	-.03	.00	-.16*	-.24**
16	WHI Positive (2)	-.01	.28**	.12	.13	.12	.22**	.18*	.07	-.06
17	Emotional Demands (2)	.22**	.11	.40**	.07	.18*	-.00	.11	-.15*	-.16*
18	Mental Demands (2)	.23**	.12	.09	.44**	.35**	.01	.09	.04	-.12
19	Work Pressure (2)	.25**	-.00	.11	.14	.34**	-.02	.12	-.13	-.08
20	Coaching (2)	-.00	.23**	-.06	.01	-.09	.36**	.11	.30**	.18*
21	Control (2)	.07	.21**	-.02	.01	-.06	.26**	.47**	.14	.09
22	Social Support (2)	-.17*	.26**	-.19**	-.02	-.05	.25**	.09	.43**	.25**
23	Communication (2)	-.03	.12	-.22**	-.14	-.25**	.26**	.01	.17*	.42**
24	Exhaustion (2)	.33**	-.03	.17*	.10	.12	-.04	-.04	-.15*	-.19**
25	Cynicism (2)	.12	-.14	.12	-.13	-.00	-.22**	-.16*	-.23**	-.19**
26	Vigour (2)	-.01	.20**	-.01	-.15*	.10	.18*	.32**	.12	.08
27	Dedication (2)	-.02	.27**	.04	.28**	.17*	.24**	.28**	.19**	.17*
28	Absorption (2)	.05	.30**	.07	.18*	.16*	.22**	.22**	.15*	.11



		10	11	12	13	14	15	16	17	18
11	Cynicism (1)	.36**								
12	Vigour (1)	-.31**	-.32**							
13	Dedication (1)	-.26**	-.56**	.59**						
14	Absorption (1))	-.21**	-.35**	.59**	.79**					
15	WHI Negative (2)	.26**	.09	.10	.05	.12				
16	WHI Positive (2)	-.05	-.22**	.12	.25**	.26**	.05			
17	Emotional Demands (2)	.10	.04	.09	.11	.14	.37**	.14		
18	Mental Demands (2)	.09	-.09	.06	.16*	.22**	.24**	.16*	.21**	
19	Work Pressure (2)	.06	-.03	.13	.14	.22**	.40**	.08	.28**	.42**
20	Coaching (2)	-.16*	-.13	.04	.13	.11	-.09	.17*	-.03	.08
21	Control (2)	-.05	-.13	.07	.22**	.18*	-.00	.04	-.03	.05
22	Social Support (2)	-.18*	-.16*	.03	.16	.12	-.26**	.12	-.15*	.03
23	Communication (2)	-.08	-.16*	.06	.10	.10	-.05	.10	-.11	-.15*

		10	11	12	13	14	15	16	17	18
24	Exhaustion (2)	.52**	.27**	-.18*	.17*	-.09	.42**	-.16	.29**	.20**
25	Cynicism (2)	.23**	.36**	-.26**	-.30**	-.25**	.09	-.21**	.12	-.08
26	Vigour (2)	-.27**	-.31**	.43**	.45**	.51**	.02	.45**	.07	.24**
27	Dedication (2)	-.26**	-.35**	.37**	.52**	.53**	.02	.42**	.05	.27**
28	Absorption (2)	-.19*	-.24**	.43**	.45**	.57**	.17*	.43**	.17*	.28**

	19	20	21	22	23	24	25	26	27
20 Coaching (2)	-.03								
21 Control (2)	.11	.26**							
22 Social Support (2)	-.13	.43**	.35**						
23 Communication (2)	-.10	.27**	.09	.26**					
24 Exhaustion (2)	.26**	-.11	-.04	-.29**	-.17*				
25 Cynicism (2)	-.00	-.20	-.22**	-.23**	-.24**	.49*			
26 Vigour (2)	.19*	.18*	.16*	.19**	.09	-.41**	-.48**		
27 Dedication (2)	.16*	.25**	.18*	.24**	.16*	-.35**	-.62**	.80**	
28 Absorption (2)	.24*	.14	.08	.14	.11	-.20**	-.36**	.77**	.81**

*Note. *p<.05, **p<.01*

Analysis of explained variance for the this model indicated that the model variables explained 87% of the variance in WHI-negative at Time 2, and 50% of the variance in burnout at Time 2. Our third hypothesis was that Time 1 job resources increase Time 2 WHI-positive and engagement. Table 5.4 presents the results for the resources model. No significant difference in chi-square was found between the stability model and the causal model (M2), meaning that the cross-lagged model does not better account for the data than the stability model. Thus Hypothesis 3 was rejected, indicating that job resources at Time 1 do not influence WHI-positive and engagement at Time 2. However, the chi-square difference test between the stability model and the reversed causal model was significant (M1 versus M3: $\Delta \chi^2 (3) = 10.97, p < .05$). Thus, support was found for Hypothesis 4, indicating that Time 1 engagement and WHI-positive influenced job resources at Time 2. The chi-square difference test between the stability model and the reciprocal model was significant (M1 versus M4: $\Delta \chi^2 (3) = 12.96, p < .05$). However, the chi-square difference between the model with reversed paths and with all cross-lagged paths was non-significant, suggesting that the addition of extra paths did not improve the fit of the model. Taken together, the reversed causal model indicated relatively better fit indices than the competing models (i.e. AGFI = .90, RMSEA = .04, NNFI = .97, ECVI = 1.09), according to the criteria suggested by Hu and Bentler (1998) or by Schumaker and Lomax (1996). The ECVI index for Model M3 (ECVI = 1.09 is less than the ECVIs for all the other lagged models. Therefore, the reversed causal model seems to be the most stable and most parsimonious model. Analysis of explained variance for the this model indicated that the model variables explained 15% of the variance in WHI-positive at Time 2, and 49% of the variance in engagement at Time 2.

The specific causal effects should be examined as well. Figure 5.3 represents the estimated structural coefficients of the causal model for the data relating to the demands model. Significant relationships were found between Time 1 job demands and Time 2 WHI-negative ($\beta = -.65, p < .01$), and between Time 1 WHI negative and Time 2 burnout ($\beta = -.40, p < .01$). However, the existence of negative relationships clearly suggests a so-called suppressor effect in the data (Maassen & Bakker, 2001). Indeed, the probability of their occurrence is relatively high in models with latent variables, in which the suppressed variable is corrected for measurement error. If a suppressor variable is involved, the interpretation of the effects of an independent

variable on the dependent variable in a path model (Pedhazur, 1982) requires reassessment. Maassen and Bakker (2001) suggest that when a suppressor and another explanatory variable measure the same thing, but at different times, an interpretation in terms of change is meaningful. Such a change effect can be assessed using equations to assess change (see Maassen & Bakker, 2001, for a full discussion). An example of such equations for Figure 3 is as follows:

$$\text{WHI-negative } t_2 = a * \text{JD}t_1 + b * \text{JD}t_2 + e_1$$

$$\text{Burnout } t_2 = a * \text{WHI}t_1 + b * \text{WHI}t_2 + e_2$$

where e_1 and e_2 are the error terms of WHI-negative and burnout, respectively. From Figure 3, suppressor effects are indicated along two paths; from Time 1 job demands to time 2 WHI-negative ($\beta = -.65$) and from Time 1 WHI-negative to Time 2 burnout ($\beta = -.40$). These paths are of a similar magnitude to their respective simultaneous paths (i.e. from Time 2 job demands (.73) to Time 2 WHI-negative and from Time 2 WHI-negative (.45) to Time 2 burnout).

Table 5.3 Demands Model: Goodness-of-Fit Indices and Chi-square Difference Tests of Nested Structural Models, N=193

Model	χ^2	df	Comparison	$\Delta \chi^2$	Δ df	AGFI	RMSEA	NNFI	ECVI
Stability Model (M ₁)	89.68	45				.88	.07	.88	.81
Causal Model (M ₂)	75.59	42	M ₁ vs. M ₂	14.09**	3	.89	.07	.91	.76
Reversed Causal Model (M ₃)	78.11	42	M ₁ vs. M ₃	11.57*	3	.89	.07	.90	.78
Reciprocal Model (M ₄)	70.24	39	M ₁ vs. M ₄	19.44**	6	.89	.07	.91	.77
			M ₂ vs. M ₄	5.35	3				
			M ₃ vs. M ₄	7.87*	3				

Note. * $p < .05$; ** $p < .01$; *** $p < .001$, χ^2 = chi-square, df = degrees of freedom; AGFI = adjusted goodness of fit index; RMSEA = root mean square of approximation; NNFI = non-normed fit index; ECVI = Expected cross-validation index



Table 5.4 Resources Model: Goodness-of-Fit Indices and Chi-square Difference Tests of Nested Structural Models, N=193

Model	χ^2	df	Comparison	$\Delta \chi^2$	Δ df	AGFI	RMSEA	NNFI	ECVI
Stability Model (M ₁)	126.24	92				.89	.04	.96	1.12
Causal Model (M ₂)	120.66	89	M ₁ vs. M ₂	5.58	3	.89	.04	.97	1.12
Reversed Causal Model (M ₃)	115.27	89	M ₁ vs. M ₃	10.97*	3	.90	.04	.97	1.09
Reciprocal Model (M ₄)	113.28	86	M ₁ vs. M ₄	12.96*	6	.89	.04	.97	1.11
			M ₂ vs. M ₄	7.38	3				
			M ₃ vs. M ₄	1.99	3				

Note. * $p < .05$; *** $p < .001$, χ^2 = chi-square, *df* = degrees of freedom; AGFI = adjusted goodness of fit index; RMSEA = root mean square of approximation; NNFI = non-normed fit index; ECVI = Expected cross-validation index



In both situations, if we constrain the magnitude of both relationships to be equal, but with opposite signs, the fit to the data does not change for job demands and WHI-negative ($\Delta \chi^2 (2) = 1.21$, n.s.), suggesting that both the current level and the changing level of job demands played a role in influencing WHI-negative at Time 2. Additionally, there is a small change in chi-square for WHI-negative and burnout ($\Delta \chi^2 (2) = 9.43$, $p < .01$). Although significant, the small chi-square difference allows us to conclude that both current and changing levels of WHI-negative played a role in influencing burnout at Time 2.

De Jonge (1995) suggests a remedy to the suppressor effect is to simply look at the total effects, which involves summing the direct and indirect effects to arrive at the total effect. Analysis of the output indicated that the total effect of time 1 job demands on time 2 WHI-negative is .23 (or 23% of explained variation) accordingly. This suggests that higher levels of job demands cause higher levels of WHI-negative. In a similar vein, the total effect of Time 1 WHI-negative on Time 2 burnout is .65. Higher levels of WHI-negative lead to higher levels of burnout.

Figure 5.4 represents the estimated structural coefficients of the reciprocal model for the data relating to the resources model. As can be seen, engagement at Time 1 influences WHI-positive at Time 2 ($\beta = .22$, $p < .01$) suggesting that higher levels of engagement at Time 1 lead to higher levels of WHI-positive interference at Time 2. Therefore, the evidence suggests that reported engagement at Time 1 is a causal factor.

5.4.3 Mediation Analysis

Mediation is typically assessed by using a sequence of independent regression equations to measure the various paths in a complex model, as initially suggested by Judd and Kenny (1981). The present approach taken to the assessment of mediation is the one recommended by Holmbeck (1997). According to this approach, there is a latent predictor variable (A), a hypothesized mediator variable (B), and a latent outcome variable (C). Firstly, one assesses the fit of the direct path between predictor and criterion (A to C).

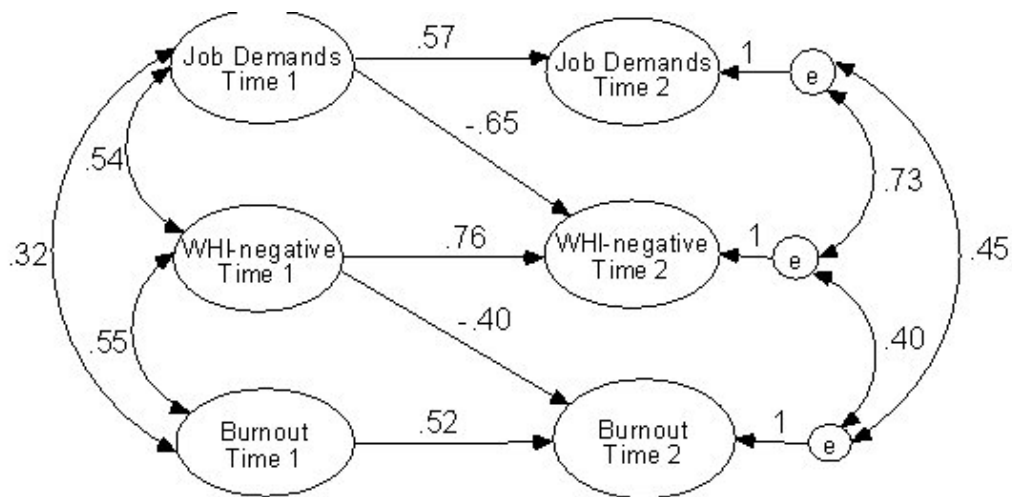


Figure 5.3 Estimated structural coefficients of the causal model

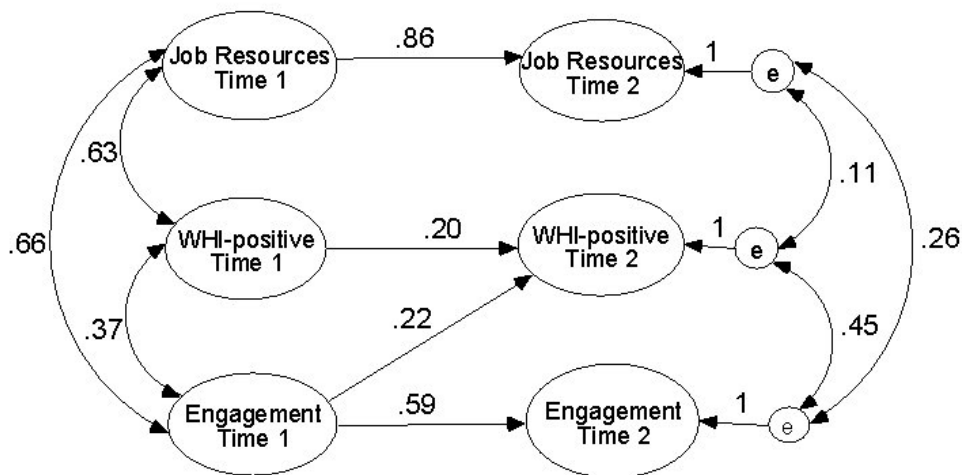


Figure 5.4 Estimated structural coefficients of the reciprocal model

Assuming the overall fit provides an adequate fit to the data, the A to B and B to C paths are examined. A to C, A to B, and B to C should all be significant in the direction predicted. The final step in assessing whether there is a mediational effect is to assess the fit of the A to B to C model under two conditions: (1) when the A to C path is constrained to zero, and (2) when the A to C path is not constrained. One then examines whether the second model provides a significant improvement in fit over the first model. If there is a mediational effect, the addition of the A to C path to the constrained model should not improve the fit.

Hypotheses 5, 6, 7 and 8 were tested by examining parsimonious models with WHI-negative/WHI-positive as the mediator between job demands/job resources and burnout/engagement. Initial analysis indicated that the criteria for models to test

Hypotheses 5, 6, and 7 were not met, in that, there were not significant paths between the predictor, mediator and criterion (paths A, B and C in our theory). These hypotheses were therefore rejected. Hypothesis 8, which stated that Time 2 WHI-positive mediates the relationship between Time 1 job resources and Time 2 engagement (exposure time effect), was tested, and met all the criteria described by Holmbeck (1997). In accordance with the criteria, the model was calculated with the path from the predictor to the criterion constrained to zero ($\chi^2(19) = 44.294$, AGFI = .895, RMSEA = .083, NNFI = .936, ECVI = .408). In the next step, this path was unconstrained and the model was estimated ($\chi^2(18) = 37.962$, AGFI = .903, RMSEA = .076, NNFI = .946, ECVI = .385).

Comparison between the two models suggests that allowing the path from predictor to criterion to be unconstrained improves the fit of the model ($\Delta \chi^2(1) = 6.33$, $p < .05$). However, Holmbeck (1997) also suggests that partial mediation can be indicated by examining the A to C path coefficients for when the proposed mediator is and is not included. Using this approach, it was found that the path coefficient from job resources at Time 1 to engagement at time 2 reduced with the inclusion of the mediator WHI-positive at Time 2; (from $\beta = .37$ to $\beta = .23$). In addition, analysis of the direct and indirect effects (as suggested by Brown, 1997) indicates that the direct effect between job resources and engagement accounted for 62% of the covariation between the two. This indicates that the more resources that people had at Time 1, the more engaged they felt at Time 2, independent of WHI-positive at Time 2. Overall, no support was found for the role of WHI-negative as mediator, but partial support was found for the role of WHI-positive as a mediator between job resources and feelings of engagement.

5.5 Discussion

The main purpose of the present study was to test whether WHI was a predictor or outcome of burnout and engagement. In addition, a job demands-burnout model and a job resources-engagement model of job stress were examined.

In terms of the demands model, support was found for Hypothesis 1, indicating that Time 1 job demands increased WHI-negative at Time 2, and WHI-negative at Time 2 increased burnout at Time 2. This means that employees who were confronted with work overload, emotional demands, and mental demands at T1, experienced WHI two years later, which, in turn, coincided with feelings of burnout



(exhaustion and negative attitudes towards work). However, analysis of the coefficients indicated a suppressor effect was present and, consequently, we needed to look at the total effects as an indicator of the relationship. The total effects were significant, suggesting they were causally related. The practical significance of the suppressor effect is that it suggests that both current and changing levels of job demands played a part. Such an interpretation is consistent with advice offered by Maassen and Bakker (2001), who suggest that when a suppressor and another explanatory variable measure the same thing but at different times, an interpretation in terms of change is meaningful. In addition, the present study did not find support for reversed causal effects in disagreement with previous studies that found burnout to be a predictor (Leiter & Durrup, 1996; Shirom & Oliver, 1986). We can only speculate as to the reasons. It might be that the effects of WHI-negative and burnout take place within a year rather than the two-year period used in this study.

In terms of the resources model, no support was found for Hypothesis 3, which stated that job resources at Time 1 increases WHI-positive and engagement at Time 2. It may be that resources only have an impact upon WHI-positive when people feel engaged in their work to begin with. Consistently, support was found for Hypothesis 4, reversed effects, indicating that engagement at Time 1 increased WHI-positive at Time 2. Engagement is defined as a positive, fulfilling, work-related state of mind (Schaufeli et al., 2002) and appears to be causally related to the ability of work to have positive influence on home life. Thus positive experiences at work gives energy that can lead to positive spillover from work to home. Employees who feel vital and strong, and are dedicated to their work probably bring this positive mood home with them. Additionally, it is conceivable that there is transference of skills from work to the home setting as well. This finding is consistent with previous studies that found theoretically similar effects (e.g., Grzywacz & Marks, 2000). Crouter (1984), for example, showed that workers who developed decision making skills at work began to use these newly developed skills to deal more effectively with their children.

The innovation of the present study concerned the measurement of positive aspects of work. However, the disadvantage of such newness is that discussion of our reversed effects can only be contrasted with previous literature on reversed effects, which primarily examined negative (stress) processes. In terms of finding reversed effects, such effects have been found by other researchers. For example, using longitudinal data, both Kelloway and Barling (1994) and Higginbottom, Barling and



Kelloway (1993) found that general measures of strain predicted perceptions of role characteristics (e.g., marital satisfaction). Kelloway, Gottlieb and Barnham (1999) suggest that it is equally plausible that perceptions of WHI would be influenced by individuals' experience of stress and found evidence that WHI at Time 2 was predicted by a stress reaction (i.e., stress symptomatology scale) at Time 1. There is evidence that affective states (e.g., depressed mood) may increase the availability of thoughts and information that will be consistent with the mood state (e.g., Bower, 1981). Thus, an empirical association between strain and WHI might be a function of selective recall or attention as individuals search for the 'causes' of their affective states. In such a scenario, it is plausible that perceptions of interference (both positive and negative) between work and home could be influenced by individuals' experience of positive and negative experiences. In terms of positive experiences, Hobfoll's (1989) conservation of resources theory, suggests that such positive experiences at work can offer resources (e.g., support or self-esteem) that help individuals to deal with other demands associated with the fulfillment of roles.

Moreover, the idea that stressors (or resources) could be influenced by strains (or feelings of engagement) finds support in the current transactional model of Edwards (1998). This cybernetic model of stress emphasizes the reciprocal nature of the stress process, and as such suggests that WHI and burnout/engagement can also influence job demands and job resources. In terms of burnout, reversed effects between emotional exhaustion and (perceived) job demands have been found (Leiter & Durrup, 1996; Shirom & Oliver, 1986), suggesting that burnout can be a predictor as well as a consequence. The present study adds to the literature on reversed effects by indicating that reversed effects can also occur between positive outcomes and positive interference.

The majority of research on the relationship between the work-home interface has focused on WHI-negative (Greenhaus, 1989), as opposed to WHI-positive, and as such the present research represents an extension of previous cross-sectional research that has examined WHI-positive (Grywacz & Marks, 2000). Although the positive consequences of WHI (and Home-Work Interference) have occasionally been discussed (Kanter, 1977), very little research has identified such positive linkages. Indeed, the present research is timely given the recommendations made by a recent review of the area (Geurts & Demerouti, 2003), which suggests that it is functional to consider how work positively affects the home domain. The present study adds to an



already growing trend towards interest in human strengths and optimal functioning rather than on weaknesses and malfunctioning.

The fact that we found no evidence of a mediational role for WHI-negative is inconsistent with other cross-sectional studies in the field (Frone et al., 1992; Geurts, Rutte & Peeters, 1999; Kinnunen & Mauno, 1998; Parasuraman, Purohit, & Godschalk, 1996; Stephens, Franks, & Atienza, 1997). Given that we examined longitudinal data, this may suggest that our time lag of two years was long enough for individuals to recover from the effects of WHI-negative. This all suggests that we need to look at WHI in a more dynamic format, in order to chart the way in which people experience such interference over a pro-longed time period. On the other hand, the positive finding with regard to the mediational role of WHI-positive suggests that job resources can have a long-term effect of the positive feelings that people bring from their job into their home domain. A more fine grained analysis of the relationships between the specific antecedents and WHI (see Table 5.2), indicated that work pressure and emotional demands were most strongly associated with WHI-negative (at both time points) and coaching was most strongly associated with WHI-positive (at both time points). Such results are consistent with the idea that WHI-negative is driven by a high workload coupled with demanding client interactions, while WHI-positive is dependent on a supporting supervisor.

5.5.1 Comparison between the Demands and Resources Models

Within both the demands and resources models, different processes are involved. It is important to recognise that the WHI-negative model was more stable over time and accounted for more explained variance than WHI-positive model. Such a fact suggests that WHI-negative can have a more considerable negative impact in comparison with the potential positive impact of WHI-positive. So, the bad aspects of work spillover are more reliably than the positive ones. In agreement with Schaufeli et al. (2002), engagement is not simply the ‘opposite’ of burnout, but the process appears to be very different with the reversed effects suggesting that individuals need to be engaged at work before positive spillover has an effect. This all adds weight to the suggestion by Schaufeli et al. (2002) that engagement needs to be studied as an independent construct from burnout. This result represents a further explication of the Job-Demand Resources theory (Demerouti et al., 2001) by extending the model with the inclusion of engagement (in agreement with Schaufeli & Bakker, 2002). In



addition, the differential results between our demands and resources model indicate that these processes work in a different way and need to be understood in this light. Indeed, it is appropriate to recognise that the explained variance between both models suggest that the relationship between demands, WHI-negative and burnout is more robust and predictive than the relationships contained within the resources model.

5.5.2 Limitations

The first issue concerns our study population. While studying people in just one occupation does have the advantage of helping to reduce confounding that could be associated with socio-economic status, a more substantial disadvantage is the difficulty in generalising the results to other occupations. Therefore, we have to be cautious in generalising our findings to a wider (and more diverse) sample of employees.

The second limitation relates to the time-lag used in this study. Two of the important assumptions of cross-lagged panel analysis concern congruencies of measurement/causal lags and equality of causal lags (Shingles, 1985). The first assumption refers to the fact that the interval between the observations must be approximately of the same length as the 'true' causal lag-that is the period it takes for the cause to take effect. However, as the length of this causal lag is unknown, it may be difficult to satisfy this assumption. In the present study, two years were chosen to even out the effects of seasonal variation. SO? The second assumption concerns the equality of causal lags. In essence, the time that variable A needs to affect variable B may be shorter or longer than the time B needs to affect A. Once again, it is difficult to know to what extent the causal lags differ. In this sense, a multi-wave study with shorter and longer time lags might have been more revealing.

5.5.3 Practical implications

Evaluating models of both demands and resources helps to inform organisational interventions. The data suggest that reducing job demands can help to reduce WHI-negative, and in turn reducing WHI-negative can help to lessen burnout. The results in the present study are consistent with research among white-collar professionals, whereby some of the roots of burnout can be located in boundary crossing problems between work and home and high workload (Winnubust, 1993).

Given that job demands are theorised to play a central role in the hypothesised energetic process that could lead to burnout (Demerouti et al., 2001; Schaufeli &



Bakker, 2002), reducing such demands is desirable. Preventive strategies and interventions exist to tackle high job demands (Quick, Nelson & Hurrell, 1997) and reduce symptoms of burnout (Schaufeli & Enzmann, 1998). Results with regard to the resources model suggests that individuals who are highly engaged with their careers are also very engaged with their home domains. Perhaps a satisfying career enables us to relax and enjoy relationships with family members (Friedman & Greenhaus, 2000). Additionally, it may also be that people in supportive organisations are more likely to receive personal support from their partners/families because their work environment has prompted them to be more psychologically open to receiving such support.

5.5.4 Future research

At a conceptual level, we assessed a job demands and resources model separately. Such an approach was theoretically driven (Schaufeli, et al., 2002) and necessitated by the need to maximize the relationship between variables studied and the robustness of a SEM model. Future studies with bigger samples could examine a “grand model” that integrates and hypothesises about the relationships between demands and resources. Such research can help to further examine the factors responsible for positive and negative WHI.

Chapter 6 Discussion

Work, home and the interaction between the two domains has been recognized as an important issue at a political level (e.g., Lewis & Lewis, 1996), a public level (e.g., Barnett & Rivers, 1996; Shellenbarger, 1999) and an academic level (e.g., Geurts & Demerouti, 2003; Parasuraman & Greenhaus, 1999). The interface between the two domains has been recognized as a major problem for employees, employers, families, organizations and society at large (Westman & Piotrkowski, 1999).

Lewis and Cooper (1999), in their review of the changing nature of the work-life agenda, have noted that the 1990's have witnessed profound changes in the nature of work. Globalisation, increasingly sophisticated technology, and constant change have been a key feature of most organizations. In both the United States (Henson, 1996) and Europe (Employment in Europe, 1997), there has been a steady growth in the number of temporary positions, with the associated problems of lack of job security and associated anxiety (Reynolds, 1997). This has resulted in people spending more time at work, as employees feel a pressure to equate "face time" with commitment (Bailyn, 1993; Lewis, 1997), and people in low-wage occupations do more than one job. So, in such a scenario time for home starts to get squeezed. This situation is compounded by the fact that boundaries between the two domains are more blurred, as organisations become more virtual with employees working from home for all of a certain part of the work week. In this sense, the logic is simple, work patterns have become more diverse and unstructured, and consequently the impact on a reciprocal relationship with the home side of the equation is increasingly important.

The combination of increasing amounts of women entering the workforce, changes in technology and an increasing number of dual-earner and one-parent families has all led to an understanding of the work-home issue which recognises that; (1) work and home are not separate domains, (2) the boundaries between the two domains are becoming increasingly blurred, (3) it is an issue for both men and women, (4) work and home can influence each other in both a positive and negative way.

The current thesis has investigated these issues with such considerations in firm focus. In the remainder of this concluding chapter; the research questions set out



in chapter one are systematically addressed, theoretical issues and limitations are recognised, and finally practical implications and future research are discussed.

6.1 Research Question One: Antecedents and outcomes of WHI/HWI

The need to understand both the antecedents and outcomes of WHI/HWI has been recognised as critical to the further development of the field (Guest, 2002; Geurts & Demerouti, 2003). The present thesis has helped to add to the debate by specifying a more systematic approach to antecedents and by the inclusion of positive outcomes (i.e., engagement). The following section will firstly address our findings with regard to antecedents and secondly, our findings as they relate to outcomes.

Overall, the internal validity of both the job demands and home demands scales used in this thesis were good. In the Internet sample (Chapter 2), the alpha coefficient was $> .70$ for all the demands scales. In addition, confirmatory factor analysis established the scales as independent constructs. Alpha coefficients for the newspaper managers (Chapter 3) were satisfactory, with the exception of emotional home demands and quantitative job demands, which had an alpha between $.50$ and $.60$. In terms of external validity, job demands were more strongly related to WHI (relative to HWI) and home demands were more strongly related to HWI (relative to WHI). In addition, in the longitudinal sample (Chapter 5), job demands were more strongly related to WHI-negative and job resources were more strongly related to WHI-positive (as expected). Overall, the systematic development of subjective measures of our antecedents (especially home antecedents) helps to progress the field beyond the analysis of more structural characteristics, such as work hours, which have limited success in explaining WHI and HWI (Gutek, Searle & Klepa, 1991; Holohan & Gilberst, 1979). Subjective measures are as important as objective ones, and can tap something different than an objective measure does (e.g., perceived career success is a useful concept because it is different from income, status or prestige). Among both the Internet sample (Chapter 2) and newspaper managers (Chapter 3), quantitative job demands and mental job demands were rated higher than their quantitative home demands and mental home demands, respectively. Such a result reflects the specific nature of the work-role, wherein our tasks and demands are very tangible (compared to our home domain). Alternatively, we may still not be assessing home demands in the most exhaustive way and the results may reflect this. The present study has made



a significant contribution to the field by the development and validation of a home demands scale (see Appendix D), with the caveat that we need to further develop the emotional home demands scale. Indeed, our development of a home demands scale represents a timely response to recent review of the field by Geurts and Demerouti (2003), who make the following recommendation for future research;

“To find out which demands and resources in the home situation affects one’s functioning at work, it is important to assess the home situation with the same preciseness as the workplace assessment. This means that work-family researchers should move beyond the investigation of primarily objective family characteristics, such as marital and parental status.” (2003:306).

In terms of outcomes, this thesis (primarily) assessed the impact of WHI/HWI on burnout and engagement. Given that a central aim of this thesis was to develop new ways of measuring the home side of the equation, it was a strategic decision to include both a well-established outcome (burnout) and a new one (engagement). Consistent with a large body of studies (Aryee, 1993; Bacharach et al., 1991; Burke, 1988; Drory & Shamir, 1988; Greenglass & Burke, 1988; Izraeli, 1988; Kinnunen & Mauno, 1998; Netemeyer et al., 1996), increased WHI was related to job burnout in the present samples. With respect to HWI, increased levels were related to increased exhaustion in both the Internet (Chapter 2) and newspaper manager (Chapter 3) samples. In addition, increased levels of HWI were also related to decreased levels of vigor in the sample of newspaper managers. Most interestingly, in our sample of dual-earners, the WHI and HWI of the IT professionals was related to the turnover intentions of their partners, but not their own. In the same sample, no relationships between WHI/HWI and marital satisfaction were found. However, both the HWI of the IT professionals and the HWI of their spouses was related to NA at home. Such a result is consistent with Frone (2000) who speculates that attributions of HWI are more likely to be attributed internally and be viewed as an indication of one’s inability to deal with one’s private life.

Engagement is a relatively new addition to the occupational field and should be viewed as part of a more general emerging trend towards a ‘positive psychology’ (Seligman & Csikszentmihalyi, 2000). The appropriateness of choosing engagement to relate to burnout is highlighted by recent studies (Schaufeli & Bakker, 2002; Schaufeli, Salanova, Gonzalez-Roma & Bakker, 2002). The data from our longitudinal sample indicated that WHI-positive was consistently related to



engagement. Theoretically, Schaufeli and Bakker (2002) have identified two underlying dimensions of work-related well-being that encompass the burnout and engagement constructs: (1) activation, ranging from exhaustion to vigor, and (2) identification, ranging from cynicism to dedication. Therefore, burnout is characterised by a combination of exhaustion (low activation) and cynicism (low identification), whereas engagement is characterised by vigor (high activation) and dedication (high identification). In particular, the results of our longitudinal sample (Chapter 6) suggested that burnout and engagement are independent constructs. This result represents a further explication of the Job-Demand Resources model (Demerouti et al, 2001) by extending it with the inclusion of engagement (in agreement with Schaufeli, et al. 2002). In addition, the differential results between our demands and resources model (Chapter 5) indicates that these processes work in different ways and need to be understood in this light. However, it is appropriate to recognise that the explained variance between both models suggests that the relationship between demands, WHI-negative and burnout is more robust and predictive than the relationships contained within the resources model.

6.2 Research Question Two: WHI, HWI and Mediation

The role of WHI as a mediator has been suggested by various studies (Frone et al., 1992; Bakker & Geurts, 2002; Geurts, Rutte & Peeters, 1999; Kinnunen & Mauno, 1998; Parasuraman, Purohit, Godschalk & Beutell 1996; Stephens, Franks, & Atienza, 1997). An overall assessment of the thesis indicates that WHI-negative played a mediational role in both the Internet (Chapter 2) and newspaper managers' (Chapter 3) samples. Additionally, HWI-negative was also found to play a mediational role between home demands and burnout. Within our sample of dual-earner couples, WHI-negative explained 8% of the variance in exhaustion for IT workers and 14% of the variance in their working spouses, after controlling for negative affectivity. Within the sample of newspaper manager's positive interference (WHI and HWI combined) mediated between social support from the supervisor and cynicism. With regard to the longitudinal sample (Chapter 5), no support was found for the role of WHI-negative as mediator, but partial support was found for the role of WHI-positive as a mediator between job resources and feelings of engagement. The fact that no mediational role was found for WHI-negative is inconsistent with previous literature, and suggests that we need to know more about the time-lags



involved in the process of WHI. In this regard, Frone et al. (1992) have recommended that daily diaries may be a way forward in understanding the dynamic nature of WHI and how individuals recover or don't recover from its effects. Overall, the evidence indicated that WHI/HWI played a partially mediating role. Such a result is consistent with the assertion by Baron and Kenny (1986) that phenomena in the social sciences involve multiple causes, and as such finding full mediation effects is highly unlikely and theoretically unexpected. As noted by various reviews (Baron & Kenny, 1986; Brown, 1997; Holmbeck, 1997), confusion and misunderstanding still exists with regard to the use of mediation. The lessons learned from this thesis is that one needs to engage in the reciprocal process of building a theoretical rationale for mediation and consequently examining both partial and full mediation. All that said, a theoretical consideration of the fact that WHI/HWI indicated partially mediating results calls for us to consider whether we should expect only a partially mediated effect to begin with. Such a view is consistent with the strong direct relationship found between some demands (e.g., workload) and outcomes (e.g., burnout). The fact that we can differentiate between different types of demands (i.e., quantitative, emotional and mental) allows us to construct different hypotheses with regard to full and partial mediation. A review of the data from the thesis and comparison between demand types reveals that quantitative job demands were most strongly correlated to WHI for both the Internet sample (Chapter 2) and newspaper managers (Chapter 3) whereas emotional home demands were the most strongly correlated with to HWI within the Internet sample. Mental home demands were the most strongly correlated to HWI for the newspaper managers. Within the longitudinal study (Chapter 5), emotional job demands were most strongly correlated to WHI-negative at both Time 1 and Time 2. In conclusion, while it is plausible that some demands will be more directly associated with outcomes, the differential nature of the relationship between antecedents and WHI/HWI means that a more prudent approach is to theorise and assess for both full and partial mediation. The importance of doing both is further suggested by parsimony, in that in checking for full mediation we also garnish the results of partial as well. Therefore, with little extra computation to do, the debate must certain on the arguments for and against full or partial mediation.

Results with regard to HWI were more mixed, with partial support for it as a mediator. Therefore, it is appropriate to examine in more detail the 'performance' of HWI within the thesis. Respondents reported significantly higher levels of WHI



(compared to HWI) in the Internet sample (Chapter 2), but not in the sample of newspaper managers (Chapter 3). This may be due to a gender effect as the newspaper sample was predominately male (81%). IT professionals reported significantly higher levels of WHI than their working spouses. Once again, confounding may be an issue, as IT professionals reported working longer hours (compared to their working spouses). However, the picture is far from clear given that there were no significant differences between IT professionals and their spouses in reported levels of HWI (or exhaustion and cynicism). Traditionally, it has argued that work and home are asymmetrically permeable (Kanter, 1977; Pleck, 1977), meaning that work has a more potent effect on home, than vice-versa. The current study suggests that such asymmetry may not be universal. For instance, in the sample of newspaper managers (Chapter 3), respondents with working partners had significantly higher levels of HWI-negative, and additionally, it was the HWI-negative of IT professionals that was related to the exhaustion and turnover of their working spouses. Taken together, these results suggest that the idea of asymmetry is not appropriate for dual-earners, who are forced to share a greater degree of the home-related burden, and thus this domain increases in significance.

The suggestion that the home domain is of increasing significance is consistent with the sociological research that examined the meaning of work (MOW, 1987). The MOW survey, conducted among eight countries including the Netherlands, asked people to rate the most important domain in their life, and found that (overall) respondents judged family (40%) to be more important than work (27%). Organisational models of job stress have been slow to recognise the impact of the home domain on work. The domain of the household acts to deliver employees to the workplace in a condition fit for work, clothed, fed and rested. Over and above these physical contributions, the home domain also provides an important source of psychological support for those in work and exerts a major influence on the overall pattern of labour market participation (Noon & Blyton, 1997).

6.3 Research Question Three: Gender differences and WHI/HWI

Traditionally, research has found no gender differences with regard to reported levels of WHI and HWI (Aryee, 1993; Duxbury & Higgins, 1991; Geurts, Rutte & Peeters, 1999; Kinnunen & Mauno, 1998). Consistently, in the present thesis, no gender differences were found for WHI and HWI in the Internet sample (Chapter 2)



and for HWI between IT workers and their working spouses (Chapter 4). Therefore, it is appropriate to examine gender differences in both the antecedents and outcomes of WHI. In the Internet study, females reported higher levels of quantitative, emotional, and mental home demands. Such a finding is consistent with qualitative research, which found that females talked more about their home domain when asked about their work domain (relative to males) (Montgomery et al. in press). However, in the same sample, the WHI of females was more strongly associated with burnout, which suggests that women are still carrying the heavier burden in the home domain and are thus socialised to cope effectively with stressors in the family domain (La Croix & Haynes, 1987). Consequently, WHI has a greater ability to drain their ability to cope with a demanding work-life. The fact that for males, home demands had a more significant direct relationship with burnout is consistent with gender-role research that suggests that men will find the home domain more stressful (Barnett & Baruch, 1987). The gender differences found in the Internet study are consistent with the differential results found by MacEwen and Barling (1994). They found evidence of gender differences in the magnitude of relationships of both WHI and HWI to depression and anxiety. Their patterns of results revealed that WHI was more strongly related to depression and anxiety among women than men, whereas HWI was more strongly related to the two outcomes for men.

The preponderance of males (81%) in the sample of newspaper managers (Chapter 3) made gender comparisons problematic. However, consistent with the other research in this thesis, there were no gender differences for reported levels of WHI and HWI. Most interestingly, HWI (negative) was reported at a significantly higher rate for managers whose partner also had a job. This represents more evidence that HWI is a bigger issue for dual-earner couples. We can speculate that the movement towards a dual-earner economy will represent the greatest challenge to individuals who still hold traditional attitudes towards the division of labour.

Fundamentally, the present thesis is in broad agreement with previous research in finding no systematic gender difference in reported levels of WHI/HWI. Such results are in stark contrast to an expectation that they would be moderated by gender due to gender-role expectations (Barnett & Baruch, 1985; Mortimoer & Sorenson, 1984). So with regard to gender, we are in the interesting position that while there is evidence that women carry the burden of care at home (Berk & Berk, 1979; Hochschild & Machung, 1989), no differences in the experience of WHI/HWI have



been found in both this thesis and previous research. It is obvious that there is a lack of theorising with regard to non-difference; for example in a recent review of literature, Geurts and Demerouti (2003) note the consistent finding of no gender differences in the literature but fail to offer any speculations as to why this might be. However, the present thesis offers some potential insights into the nature of gender difference. Within the Internet sample (Chapter 2), gender differences emerged in the relationship between demands and burnout, with males indicating a stronger relationship between home demands and burnout, and females indicating a stronger relationship between WHI and burnout. Although not conclusive, the present results highlight the fact that gender differences are crucial in the way that antecedents influence WHI/HWI and the way that WHI can impact upon a job-related strain such as burnout. It may be that gender differences represent a risk factor that increases the likelihood between demands and burnout. Although such an idea is inconsistent with the study of Frone (2000) who found that gender didn't moderate between WHI and psychiatric disorders, it may still have value in the sense that females may cope worse with job-related strain (an expectation from gender role theory). In conclusion, the present thesis presents us with 'food for thought' with regard to the way in which gender impacts upon the WHI/HWI process, but much more theorising is needed. In the contemporary world of work, such a theory would need to account for the fact that discontinuous careers are replacing 'jobs for life' and the shift from careers of advancement to careers of achievement (Zabursky & Barley, 1997) may be more congruent with women's needs than with those of men who wish to become more involved in family life.

6.4 Research Question Four: WHI, HWI and Crossover

In the previous section, it was observed that gender differences were not found for reported levels of WHI/HWI. However, the observed crossover results for the dual-earner couples may help us to better understand the link between gender and WHI/HWI. Gender effects were found in the sample of IT workers and their working spouses, in the sense that the HWI-negative of IT workers (who were predominantly male) was associated with the exhaustion and turnover intentions of their spouse (who were predominately female). Such a gender effect is consistent with research from general populations surveys that find, compared to men, women report a greater number of life events occurring to members of their networks and are more adversely



affected by network events (Kessler & McLeod, 1985; Kessler, McLeod & Wethington, 1985; Thoits, 1987). Spouses demands may detract from the emotional health of their partners by exhausting the partners' coping capacities, thereby increasing the partners' vulnerability to concurrent or subsequent stressors who is the focal person here: the spouse or the partner (Rook, Dooley & Catalano, 1991). In this sense, the real gender differences with regard to the field of WHI/HWI does not concern gender-role expectations, but rather gender role differences in the way that individuals are prompted to be empathic to the stress of another person.

The usefulness of crossover is that it helps to elaborate role theory and mechanisms relating to emotional contagion that underscore the interrelations between the focal person and his/her role senders in the different settings (work/home) where the individual finds him/herself (Westman, 2001). Crossover provides a new angle from which to approach WHI/HWI, and helps to widen the range of stressors and strains that can be studied. It is noteworthy that crossover has been overlooked by some of the more recent reviews of the area (e.g. Geurts & Demerouti, 2003; Guest, 2002; Parasuraman & Greenhaus, 1999). The centrality of role theory within the WHI/HWI literature makes such an omission unfortunate when one considers the interesting implications that crossover stimulates. For example, Westman (2001) poses the question of whether crossover might lead people to redefine their roles at work and home, thereby altering their perceived role processes. In the present thesis, it was found that the home demands of the IT workers crossed over into the work domain of their spouses (Chapter 4), in terms of both exhaustion and intention to leave the organisation. As such, it is possible that both partners would experience a perception of reduced ability within these roles, and such a feelings would prompt them to re-evaluate their ability to perform well in their respective roles. The fact that crossover could potentially prompt role re-evaluation (independently of how they were individually performing) makes it an interesting area of study for a theory which is rooted in role theory.

6.5 Research Question Five: The Way Forward for Future Research

The present thesis represents a response to those researchers who call for us to measure both WHI and HWI (Allen et al, 2000; Frone et al. 1992, 1997) and also to measure positive spillover (Grzywacz & Marks, 2000; Greenhaus, 1988). A particular strength of the present research relates to the use of multiple methodologies to assess



the phenomena of interest. Beyond this, future studies would benefit from also assessing WHI/HWI in relation to both strategic human resource indicators (at the organisation level) and the impact of increasing elder care (at the community level).

For example, Netemeyer, McMurrian and Boles, (1996) found that HWI was related to self-rated sales performance. Research that could effectively link WHI/HWI to performance indicators would establish it even more predominately as a strategic human resources issue. Additionally, the more traditional measures of absenteeism have not indicated strong relationships with WHI (Allen et al., 2000). However, research that evaluates unscheduled absenteeism indicates the number one reason was family-related issues (26%), with personal needs (20%) coming as the third most frequent reason (Van der Wall, 1998). Taken together, these two causes account for almost half of all incidents. It is precisely these types of employee withdrawal behaviours that can provide us with more relevant outcome variables. Indeed, it is problems such as these that work-life programs can be designed to address.

At a wider community level, demographic data indicate that elder care is and will be a fact of life for people throughout their working lives (Moen, Robinson & Fields, 1994). In terms of research, such increased responsibilities might influence job performance by causing employees to be partially absent from work, arriving late for work, leaving early, or extending lunch breaks. Such work withdrawal behaviour is the area where researchers can really gauge the impact of these increasing forms of HWI. The nature of living is changing with the increasing use of telework and an increasing amount of single parents in society. All these developments call on researchers to assess the reliability and validity of present models of work and home, and the need for new models to emerge to account for these different work experiences. Indeed, the need to be constantly reviewing our assumptions about work practices is highlighted by a recent exhaustive review of telework research (Bailey & Kurland, 2002), which found little evidence to support the hypothesis that the telework population was comprised of women 'escaping' from WHI issues. In this regard, Barnett and Hyde (2001) in their explication of their expansionist theory encourage researchers to be aware that theories need to be constantly updated to reflect changing realities.

At the methodological level, a movement towards more crossover studies and diary studies will help to assess the important impact that WHI/HWI can have on the



people around us and provide a more dynamic picture of WHI/HWI in relation to time-lag and recovery rates.

6.6 The Meaning of Work and Home

It is useful to pause and reflect on what this thesis tells us about the meaning of work and home. Indeed, recent evidence has pointed to the fact that the physical and psychological boundaries of work/home are permeable and flexible (Clark, 2002; Montgomery et al., in press). Montgomery et al. (in press), analysing the meaning that people attribute to work and home, found this idea was most salient in a female executive whose house was only a 'home' when she didn't do work-related activities in it. Moreover, another female employee highlighted how home issues can play a central part in work relations with regard to her consistent 'battle' with the management to ensure that the working arrangements of her and her partner (who both worked at the company) were compatible with their work and home arrangements. Such accounts suggest that individuals actively negotiate the worlds of work and home in an effort to integrate them. Additionally, such research is consistent with the Border theory proposed by Clark (2000), and provides good examples of border permeability that Clark describes in her theory. At the pragmatic level, such research provides additional arguments in favour of the idea that meaningful approaches to work/home and their interaction can best be accounted for by studying negative and positive aspects of the relationship, and the way that demands and resources influence the experience of WHI and HWI.

The orthodox empirical approach involves the specification of hypotheses and the subsequent systematic testing of these hypotheses (Kerlinger & Lee, 2000). All that said, the need to interpret our data means that the quantitative studies (Chapters 2, 3, 4, and 5) in this thesis also provide useful clues in exploring the meaning of work and home (Kritzer, 1996)⁹.

Firstly, across the four studies, WHI emerged as a significant and consistent predictor of burnout. This all suggests that for individuals, work does impact upon

⁹ Kritzer (1996) argues that the systematic and constructive nature of quantitative analysis means that quantitative analysis in the social science probably involves more levels of interpretation than does qualitative analysis.

their home lives and such interference contributes to increased feelings of burnout. Indeed, the increasing importance of non-work activities (MOW, 1987) is probably an important component within this, as it would be difficult to feel interference between two domains that one valued very unequally. So, in contrast with the older ideas about the asymmetric nature of the relationship (Kanter, 1977; Pleck, 1977), the consistent strength of WHI in predicting burnout suggests that viewing work as the “predominant” domain is incorrect and prompts us to view the two domains as oppositional. The most recent approaches to work-home interactions call for us to view this phenomena as one concerning both integration of domains (Parasuraman & Greenhaus, 1999) and expansion of roles (Barnett & Hyde, 2001). The conclusion is quite a simple one, if the home domain was not important then integration wouldn’t even be a problem to begin with.

Secondly, HWI is meaningful; the challenge lies in the conceptualisation. This thesis represents a starting point in the development of scales to adequately assess HWI and the antecedents that influence it. While it is acknowledged that WHI explained more of the variance than HWI among our studies, HWI could be seen in sharpest focus with regard to our study of dual-earners (Chapter 4). The fact that the HWI of IT professionals was associated with the job exhaustion and intention to leave of their partners demonstrates that it has real meaning as a phenomenon, and (probably more importantly) that it has real meaning as a phenomenon for men.

Thirdly, and lastly, the longitudinal study (Chapter 5) indicated most clearly that positive aspects of our work constitute important meaning. The data indicated that feelings of engagement at work preceded the benefits of positive spillover from work to home.

6.7 Theoretical Issues

In the present thesis, the theoretical approach taken to work and home was operationalised by the instrument used throughout the research. Such an approach stipulates that the interaction between work and home is best studied in terms of negative and positive spillover. The instrument employed distinguishes between four different dimensions underlying the work-home interaction (Wagena & Geurts, 2000). More specifically, one’s functioning (and behaviour) in one domain is influenced by demands from the other domain, and vice versa. The present thesis extends the more traditional model of spillover by placing such interactions within the general



framework of the job demands-resources (JD-R) model (Demerouti et al., 2001). So when job demands require too much effort and time (e.g., overload or deadlines) and job resources (e.g., support or autonomy) are insufficient to deal with high job demands, energy and resources can be depleted and one's functioning at home can be affected (WHI-negative). Alternatively, when job resources are sufficient to deal with job demands, individuals may be stimulated to learn from and "grow" in their job and energy will be mobilised rather than depleted within the home domain (WHI-positive). Both processes could also initiate from the home domain, whereby home demands (e.g., household and care-giving tasks) that require too much effort and time and the lack of home resources (e.g., support from your spouse) will be associated with negative experiences that will deteriorate your functioning in the work domain (HWI-negative). Conversely, the existence of home resources (e.g., babysitting, support) that help individuals to deal with the demanding aspects of their home will be associated with positive functioning at one's work (HWI-positive).

The five theoretical models presented in the Introduction (Chapter 1) were largely descriptive. Reviewing these five models again, it is difficult to conclude that the segmentation model is appropriate within the contemporary setting with the increasingly accumulated evidence that both WHI and HWI are significant issues for a variety of occupations and individuals (Chapters 2, 3, 4, and 5). Additionally, the instrumental model is a purely descriptive model as well and excludes a large range of individuals. Therefore, in agreement with a review by Lambert (1990), spillover and compensation are the processes that are most consistent with the empirical evidence pertaining to both positive and negative spillover. In this sense, the present approach can be viewed as a *rapprochement* between the role scarcity (negative spillover) and role enhancement (compensation and positive spillover) hypotheses. Additionally, the demands and resources model (Chapter 5) has helped to extend the previous work on the JD-R model by including engagement (as well as burnout), and extend beyond the traditional role strain hypothesis that assumes that multiple roles can only lead to "strain". A logical conclusion of the present thesis is that the job demands-resources model should be broadened to include other (home) demands and resources as well. The present thesis does not purport to present a unique and 'fresh' theoretical approach to the work/home nexus, but it has helped to frame the conceptualisation of WHI/HWI in a way that recognises the substantive evidence that exists for both the scarcity and enhancement hypotheses.



6.8 Limitations

Firstly, the majority of studies in this thesis involved populations who could be described as 'white-collar'. Conducting research among a narrow range of occupations limits our ability to generalise to the wider population. Economic hardship has well-documented effects on psychological distress and marital conflict (Conger, Rueter & Elder, 1999), and so it is possible that differences in socio-economic status can create their own specific WHI/HWI problems. The empirical evidence on the issue is mixed, whereby Frone et al. (1992) found that their hypothesised model of work-family conflict generalised across both blue- and white-collar workers, but found marked difference in parameters estimates. More specifically, they found that the relationship between WHI and family distress was only important for blue-collar workers, and the relationship between job involvement and WHI was only important for white-collar workers. Such research suggests that differences between socio-economic groups can be expected.

Secondly, although this thesis employed a multi-method approach to the phenomena of WHI/HWI, it is important to recognise that it was primarily based on self-report data and as such is accompanied by all the problems inherent in using self-report instruments (Frese & Zapf, 1988; Kasl, 1987). Such issues include overlap between the independent and dependent variables, and common method variance. Despite such measurement difficulties, stressors and strains do play a central role in the job stress process, and as such self-report measures need to be augmented by other types of measures (not replaced). Indeed, it has been argued that the 'typical' criticism of self-report methods are at worst misinformed and at best unimaginative (Howard, 1994; Spector, 1994)

Thirdly, the benefits of using longitudinal data over cross-sectional data has been well established (Taris, 2002). However, such advantages are only realised if one knows a priori the optimal time lags. Indeed, in the absence of appropriate time lags, longitudinal data can provide biased parameter estimates that may be worse than those provided by cross-sectional data (Gollub & Reichardt, 1987; Kessler, 1987; Kessler & Greenberg, 1981; Leventhal & Tomarken, 1987). With regard to WHI and HWI, Frone et al., (1992) have recommended the strength of daily diary studies to gauge optimal lags in and across different relationships. Such an approach would allow for



stronger causal inferences and provide richer information concerning the magnitude of causal relationships.

Fourthly, an innovation of the present research involved the development of systematic scales to measure both job and home demands. However, the majority of our studies were limited by predominately using work-related outcomes (e.g., burnout and engagement). Future research should try to balance the examination of the phenomena by the employing a comparable set of non-work related outcomes. Indeed, Kirchmeyer (1992, 1993) provides an interesting example of how we can explore the non-work domains by looking at parenting, community involvement, and recreation activities.

Fifthly, and lastly, researchers have recognised the role that mood can play in how respondents fill out questionnaires relating to states such as well-being (Brief et al, 1988; Burke, Brief & George, 1993). Negative Affectivity (NA) as a term was first used by Tellegen (1982) and defined by Watson and Clark (1984) as a mood-dispositional dimension that reflects pervasive individual differences in negative emotionality and self-concept. The implications of NA for the study of stress are straightforward. It is expected that NA would be associated with self-reports of stressors (particularly the ones that are more subjective in nature). Therefore, it is expected that NA would inflate the observed associations between self-reports of stressors and strains considerably. Empirical studies exist which offer evidence to support this assertion (Schroeder & Costa, 1984; Watson & Pennebaker, 1989). In essence, the debate about NA relates to its potential confounding effect in self-report research (Watson & Clark, 1984). However, within such a debate there has been opposing voices, which have justified the omission of this potential confounder in research. For example, Moyle (1995) in a study of possible influences that negative affectivity could have on the stressor-strain relationship concluded that NA cannot generally account for the observed correlations between work environment measures and strains. Similarly, Schonfield (1996) concluded that NA does not overly distort self-report measures and strain outcomes. Indeed, Dollard and Winefield (1998) even warn against that practice to control for the nuisance aspects of this trait as this may lead to underestimation of the impact of the work environment on strain. Conversely, within the middle ground of the debate about NA, Spector, Zapf, Chen and Frese (2000) while recommending that NA should be included, have also suggested the alternative strategy whereby reducing the affective tone of stressors and strains could



optimise measures. However, even such middle ground approach receives short shrift by researchers who think that attempting this is probably difficult and pointless (Payne, 2000).

Conclusions with regard to the role of NA in relation to WHI research are limited by the few available studies that exist. NA has only been examined in three studies of WHI (Carlson, 1999; Frone, Russell & Cooper, 1983; Stoeva, Chiu & Greenglass, 2002). The results are mixed. Carlson (1999) found that NA was related to three forms of WHI-time based conflict; strain based conflict and behaviour based conflict. However, Stoevar et al. (2002), while finding that NA indirectly affected WHI/HWI through its effect on job stress and family stress, found no significant direct effects for NA on WHI or HWI. In the present thesis, only one empirical study included a measure of NA on the grounds that it had been established as an important variable in previous and similar crossover research. In regard to our dual-earner data, although NA was associated with various outcomes (e.g. exhaustion and psychosomatic complaints), both WHI and HWI still predicted a significant amount of variance. Future studies, should aim to study both dispositional and situational factors and their interaction (Stoeva et al., 2002). Scientifically and ethically, researchers should have sound conceptual reasons for adding to the ‘burden’ of respondents who have to fill out lengthy survey forms.

6.9 Practical Implications and Future Directions

To return to a question asked in the introduction, whose problem is WHI/HWI? On the basis of this thesis, it is a problem for both men and women. To be sure, the solutions to the problem are highly dependant on the lens through which you look at it (Greenhaus & Parasuraman, 1999). Individual, organisational and community-based approaches will all have different goals and agendas. To date, interventions aimed at the individual and organisational level have tended to place work as the starting point of strategies, and interventions have tended to ask not how we can help people balance work and home, but how we can help people arrange their home life so that it interferes with work to the smallest degree possible. While not ignoring the preponderance of WHI, this thesis has gone some way to establish the importance of HWI, especially with regard to the relationship between home demands and burnout for males in our Internet sample. The practical implication is that the home side of the equation is under-researched and under-valued in terms of how it can affect the work role of the individual and that of their spouse. Companies are usually



quite ready to provide work-related training and support to employees, but maybe it is time that organisations also try to provide training and support for non-work related demands (e.g., parental training, role re-orientation for couples).

A consistent explanation offered for employers' lack of attention to the work and home interface is that they view it as a sensitive issue, where they may perceive it as invading an employee's privacy if they inquire about it (Hall & Richter, 1988). This is an interesting rationale when one considers that (typically) WHI is more prevalent than HWI. For example, Frone, Russell and Cooper (1992b) found that the prevalence rate for WHI (60%) was almost three times higher than the rate for HWI (22%) among both men and women. In the present study too, WHI was reported at consistently higher rates than HWI. Such evidence suggests that work is having a detrimental impact on the home domains of employees, and that employers have an obligation to be sensitive to this. For employers to take a separate worlds approach to this issue is to fly in the face of the empirical and anecdotal evidence.

In this sense, the corporate world must expand its conception of why it needs to be concerned about WHI/HWI related issues. Evidence from the United States has indicated that employees with WHI/HWI problems are three times more likely to consider quitting (Johnson, 1999). In addition, employees who believe that work is causing problems in their personal lives are much more likely to make mistakes at work (30%) compared with those who have a few job related personal problems (19%) (Johnson, 1995). Both Wohl (1999) and Friedman and Johnson (1999) have observed that corporations will require extraordinarily committed and creative employees to permit them to survive and prosper in a turbulent and highly competitive market. To promote such energy and commitment, employers must demonstrate concern with the whole person. Moreover, organisations must pay more than lip service to the view that WHI/HWI is not a woman's issue, but rather a human issue. It is widely known that men participate less extensively in work-family programs (Powell, 1999), and this sex difference exists in socially progressive societies (Lewis, 1999). Indeed, such a situation is compounded by the fact that adopting a single work-life program (e.g., dependent child care), as opposed to a full system of initiatives (see Bardoel, Tharenou & Moss, 1998), in effort to be seen to 'work-life friendly' may actually engender negative feelings or resentment and perceptions of unfairness (Grover, 1991; Kossek & Nichol, 1992). In this sense, the area is in need of a paradigm shift away from WHI/HWI, which can potentially reinforce us to believe



that both domains are conflicting, towards a more integrationist picture of how work and home interact (Parasuraman & Greenhaus, 1999; Rapoport, Bailyn, Fletcher & Pruitt, 2002). A perspective that starts from work-personal life integration as its goal recognises that people do strive to integrate these two domains (albeit at different rates of integration, see Nippert-Eng, 1996, for a discussion of integration).

At the individual level, people need to clarify what is important in terms of values and life priorities. Goals that are articulated and understood are more likely to be met. Indeed, not only should goals be clarified, but also they should be continually experimented with to challenge assumptions and achieve optimum work-personal life arrangements (McNiff, 2000). The need to rethink personal priorities is most clearly demonstrated in the regret expressed by Laurel Cutler, vice-chairman of Foote Cone & Belding, “I wish I had known sooner that if you miss a child’s play or performance or sporting event, you will have forgotten a year later the work emergency that caused you to miss it. But the child won’t have forgotten that you weren’t there.” (Wall Street Journal, 1997).

In conclusion, this thesis has contributed to our understanding of the nexus between work and home, and the way that interference between the two is an important variable in the job stress literature. Additionally, new questions and new hypothesis have been identified in an effort to consider the balance between work and home, and balance such considerations against the most fruitful path to proceed along.



Chapter 7 References

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APPENDICES

Appendix A. Survey Work-home Inteference-Nijmegen (SWING)¹⁰

Negative work-home interference

How often does it happen that ...

1. you are irritable at home because your work is demanding?
2. you do not fully enjoy the company of your spouse/family/friends because you worry about your work?
3. you find it difficult to fulfil your domestic obligations because you are constantly thinking about your work?
4. you have to cancel appointments with your spouse/family/friends due to work-related commitments?
5. your work schedule makes it difficult for you to fulfil your domestic obligations?
6. you do not have the energy to engage in leisure activities with your spouse/family/friends because of your job?
7. you have to work so hard that you do not have time for any of your hobbies?
8. your work obligations make it difficult for you to feel relaxed at home?
9. your work takes up time that you would have liked to spend with your spouse/family/friends?

¹⁰ Scale developed and published by Wagena and Geurts (2000).



Negative home-work interference

How often does it happen that ...

10. the situation at home makes you so irritable that you take your frustrations out on your colleagues?
11. you hardly enjoy your work because you worry about your home situation?
12. you have difficulty concentrating on your work because you are preoccupied with domestic matters?
13. problems with your spouse/family/friends affect your job performance?
14. you arrive late at work because of domestic obligations?
15. you do not feel like working because of problems with your spouse/family/friends?

Positive work-home interference

How often does it happen that ...

16. you come home cheerfully after a successful day at work, positively affecting the atmosphere at home?
17. after a pleasant working day/working week, you feel more in the mood to engage in activities with your spouse/family/friends?
18. you fulfil your domestic obligations better because of the things you have learned on your job?
19. you are better able to keep appointments at home because your job requires this as well?
20. you manage your time at home more efficiently as a result of the way you do your job?
21. you are better able to interact with your spouse/family/friends as a result of the things you have learned at work?

Positive home-work interference

How often does it happen that ...

22. after spending time with your spouse/family/friends, you go to work in a good mood, positively affecting the atmosphere at work?
23. after spending a pleasant weekend with your spouse/family/friends, you have more fun in your job?
24. you take your responsibilities at work more seriously because you are required to do the same at home?
25. you are better able to keep appointments at work because you are required to do the same at home?
26. you manage your time at work more efficiently because at home you have to do that as well?
27. you have greater self-confidence because you have your home life well organized?

Note: The alternatives are: 'never' (0), 'sometimes' (1), 'often' (2) and 'always' (3).

Appendix B. Summary of Antecedents of WHI

Author(s) and date of study/ Sample Characteristics	Bivariate r	Antecedent measure	WHI measure	N
<u>Job Involvement</u>				
Adams, King & King (1996): Employees attending after-work education	.28**	Kanungo (1982:5)	Kopelman et al. (1983:4)	163
Eagle, Icenogle, Maes & Miles (1998): Employees attending evening after-work education	.25**	Kanungo (1982:5)	Frone et al. (1992:2) Gutek et al. (1991:4) Wiley (1987:7)	386
Fox & Dwyer (1999): Nurses	.03	Lodhal & Kejner (1965:7)	Self-developed (1)	113
Frone, Russell & Cooper (1992): Random sample of employed adults	.05	Kanungo (1982:5)	Self developed (2)	631
Hammer, Allen, & Grigsby (1997). Dual-earner couples: bank employees	.22**(females); .04 (males)	Quinn & Staines (1979:3)	Goff et al (1990:16) NDA	399
Parasuraman et al., (1996): Entrepreneurs	.22*	Lodhal & Kejner (1965:4)	Kopelman et al (1983:6)	111



Author(s) and date of study/ Sample Characteristics	Bivariate r	Antecedent measure	WHI measure	N
<u>Workload</u>				
Frone, Yardely & Markel (1997) Employed Adults	.47**	Cannann, Fichman, Jenkins & Klesh (1979:3)	Frone et al. (1992:2) Gutek et al. (1991:4)	
Geurts, Rutte & Peeters (1999): Medical residents	.54***	Veldhoven et al (1997:11)	Kopelman et al (1983:5)	166
Parasuraman, Purohit & Godshalk, Beutell (1996): Entrepreneurs	.61***	Caplan et al (1975:4)	Kopelman et al (1983:6)	111
Wallace (1999): Lawyers [Males = 180, Females = 158] reported p<.10	Males (sbc)(tbc) (.32)(.64) Females(sbc)(tbc) (.42)(.64)	Caplan et al (1975:4)	Kopelman et al (1983:3) Fimian, Fastenau & Thomas (1988:3) Sbc = strain based conflict Tbc = time based conflict	338



Author(s) and date of study/ Sample Characteristics	Bivariate r	Antecedent measure	WHI measure	N
<u>Work schedule inflexibility</u>				
Aryee (1992): Married professional women	(JP)(JS)(JH) (-.11)(.09)(.11*)	Staines & Pleck (1986:2)	Small & Riley (1990: 15) JP = job-parent, JS = job spouse, JH = job home	354
Aryee (1993): Dual-earner couples	Husband(.16)(.02) Wife (.12)(.01)	Staines & Pleck (1986:2)	Small & Riley (1990: 15) JP = job-parent, JS = job spouse	95
Eagle, Icenogle, Maes & Miles (1998): Employees attending after-work education	.23**	Johnson (1982:4)	Frone et al. (1992:2) Gutek et al. (1991:4) Wiley (1987:7)	386
Geurts, Rutte & Peeters (1999): Medical residents	-.36***	Jansen (1987:9)	Kopelman et al (1983:6)	166
Parasuraman, Purohit & Godshalk, Beutell (1996): Entrepreneurs	.22*	Greenhaus et al (1989:3)	Kopelman et al (1983:6)	111
Thomas & Ganster (1995): Health professionals	-.09	Self-developed (2)	Bohen & Viveros-Long (1981:16); Kopelman, Greenhaus & Connelly (1983:8)	398



Author(s) and date of study/ Sample Characteristics	Bivariate r	Antecedent measure	WHI measure	N
Job stress				
Bernas & Major (2000): Employed Adults	.68*	Self-developed (12)	Kopelman et al. (1983:4)	206
Frone, Russell & Cooper (1992): Random sample of employed adults	.31*	Job Stressor Index (based on lit. review: 20)	Self developed (2)	631
Commitment				
Casper, Martin, Buffardi & Erdwins: (2002): Employed mothers	Continuance (.26*) Affective (.11)	Meyer & Allen (1984:16)	Kopelman et al (1983:4)	143
Frone, Yardely & Markel (1997): Employed Adults	.31**	Self-developed (1)	Frone et al. (1992:2) Gutek et al. (1991:4)	372
Frequency of Stress				
Fox & Dwyer (1999): Nurses	.24*	Motowidlo, Packard & Manning (1986:45)	Self-developed (1)	113



Author(s) and date of study/ Sample Characteristics	Bivariate r	Antecedent measure	WHI measure	N
<u>Supervisor support</u>				
Fox & Dwyer (1999): Nurses	-.19*	Beehr, King & King (1990: 12)	Self-developed (1)	113
Frone, Yardely & Markel, 1997 Employed Adults	-.10*	Cutrona & Russell (8)	Frone et al. (1992:2) Gutek et al. (1991:4)	372
Geurts, Rutte & Peeters (1999): Medical residents	.44**	Self-developed (6)	Kopelman et al (1983:5)	166
Senecal, Vallerand & Guay (2001): Professionals with at least one child	-.09	Pelletier (1992:3)	Bohen & Viveros-Long (1981:2)	786
<u>Co-worker support</u>				
Frone, Yardely & Markel (1997): Employed Adults	-.08	Cutrona & Russell (8)	Frone et al. (1992:2) Gutek et al. (1991:4)	372
<u>Career priority</u>				
Hammer, Allen, & Grigsby (1997): Dual-earner couples: bank employees	.06(females) .14**(males)	Greenhaus et al (1989:1)	Goff et al (1990:16)	399



Author(s) and date of study/ Sample Characteristics	Bivariate r	Antecedent measure	WHI measure	N
<u>Time Commitment to Family</u>				
Parasuraman, Purohit & Godshalk, Beutell (1996) Entrepreneurs	.51***	Self-developed (1)	Kopelman et al (1983:6)	111
<u>Organisational climate</u>				
Swanson et al, 1998 Male & female doctors	.37***	Cooper, Sloan & Williams (1988:11)	Cooper, Sloan & Williams (1988:5) NDA	779
<u>Managerial role</u>				
Swanson et al, 1998 Male & female doctors	.54***	Cooper, Sloan & Williams (1988:11)	Cooper, Sloan & Williams (1988:11) NDA	779
<u>Feeling valued by one's partner</u>				
Senecal, Vallerand & Guay (2001): Professionals with at least one child	-.12**	Self-developed (3)	Bohen & Viveros-Long (1981:2)	786

Note. * $p < .05$, ** $p < .01$, *** $p < .001$, NDA = WHI/HWI measured, but not distinguished in the analysis. Numbers in parentheses after year refers to the number of items in that measure



Appendix C. Summary of Antecedents of HWI

Author(s) and date of study/ Sample Characteristics	Bivariate r	Antecedent measure	WHI measure	N
<u>Family Involvement</u>				
Adams, King & King (1996): Employees attending after-work education	.05	Frone et al (1992:5)	Burley (1989:4)	163
Eagle, Icenogle, Maes & Miles (1998): Employees attending after-work education	-.02	Yogev & Brett (1985:11)	Frone et al. (1992:2); Gutek et al. (1991:4); Wiley (1987:7)	386
Frone, Russell & Cooper (1992): Random sample of employed adults	.01	Kanungo (1982:5)	Self developed (2)	631
Hammer, Allen, & Grigsby (1997): Dual-earner couples: bank employees	.13**(females), .04 = (males)	Lodhal & Kejner (1965:4)	Goff et al (1990:16) NDA	399
Kirchmeyer (1992): Employed Adults	(p)(w)(r) (.39*)(.31*)(-.09)	Lodhal & Kejner (1965:5)	Self-developed (15): HWI: parenting(p), community work(w), recreation(r)	110



Author(s) and date of study/ Sample Characteristics	Bivariate r	Antecedent measure	WHI measure	N
Kirchmeyer (1993): Managers	(p)(w)(r) (.47***)(.38***)(.50***)	Lodhal & Kejner (1965:4)	Kirchmeyer (1992:8) HWI: parenting (p), community work (w), recreation (r)	221
Parasuraman, Purohit & Godshalk, Beutell (1996): Entrepreneurs <u>Parental Stress</u>	-.32**	Lodhal & Kejner (1965:4)	Kopelman et al (1983:4)	111
Bernas & Major (2000): Employed Adults	.29*	Abidin (1995:13)	Burley (1989:4)	206
<u>Family Stress</u>				
Frone, Russell & Cooper (1992): Random sample of employed adults	.29*	Kessler (1985:6)	Self developed (2)	631



Author(s) and date of study/ Sample Characteristics	Bivariate r	Antecedent measure	WHI measure	N
<u>Spouse social support</u>				
Frone, Yardely & Markel (1997): Employed adults	-.14**	Curtona & Russell (8)	Frone et al (1992:2) Gutek et al (1991:4)	372
<u>Parenting overload</u>				
Frone, Yardely & Markel (1997): Employed adults	.42**	Kessler (1985:2) Frone et al (1992:2)	Frone et al (1992:2) Gutek et al (1991:4)	372
<u>Information/emotional support from Family</u>				
Adams, King & King (1996): After-work education for employees	.30**/.39**	King, Mattimore, King & Adams (43)	Burley (1989:4)	163
<u>Domestic work</u>				
Swanson et al (1998): Doctors	.17*	Self-developed (1)	Cooper, Sloan & Williams (1988:11)	779



Author(s) and date of study/ Characteristics	Sample	Bivariate r	Antecedent measure	WHI measure	
<u>Home Stress</u>					
Swanson et al (1998): Doctors		.45*	Self-developed (1)	Cooper, Sloan & Williams (1988:11)	77 9
<u>Time Commitment to Work</u>					
Parasuraman et al.(1996): Entrepreneurs		-.06	Self-developed (1)	Kopelman et al (1983:4)	11 1

*Note. *p<.05, **p<.01, ***p<.001; NDA = WHI/HWI measured, but not distinguished in the analysis. Numbers in parentheses after year refers to the number of items in that measure*



Appendix D. Home demands Scale

Quantitative Home Demands

1. Do you find that you are busy at home?
2. Do you have to do many things at the same time at home?
3. Do you have to carry out a lot of tasks at home (household and/or caring)?
4. Do you have enough time to carry out all your tasks at home

Emotional Home Demands

1. How often do emotional issues arise at home?
2. How often does your housework confront you with things that touch you personally?
3. Does your home life place a lot emotional demands on you?

Mental Home Demands

1. Do you have to remember a lot of things with regard to home life?
 2. Do you have to do many things at the same time at home?
 3. Do you have to co-ordinate everything at home?
 4. Do you have to plan and organize a lot of things in relation to your home life?
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Summary in English

In contemporary society, work and home represent the two most significant domains in the life of a working individual. Thus, employed men and women are increasingly concerned about managing the conflicts experienced in fulfilling the dual demands and responsibilities of work and family roles. The unfolding changes in the composition of the workforce together with the growing proportion of workers in non-traditional family forms have focused heightened attention on the conflicts faced by employed men and women in balancing the competing demands and responsibilities of work and family roles. Work-Home Interference (WHI) and Home-Work Interference (HWI) are experienced when pressures from both domains are incompatible. This thesis explored the phenomenon of WHI/HWI from multiple methodologies and contributed to the field by the introduction of a more systematic approach to the measurement of the antecedents of both WHI and HWI.

Chapter 1 reviewed the important issues in the consideration of WHI and HWI. This section provided both a political, social, empirical and theoretical overview of the area. This chapter went some way to establishing the fact that WHI and HWI are potentially problems for everybody in society. Indeed, the historical and demographic trends suggest that women will increasingly participate in the workforce (and join their male counterparts), and as such the probability that WHI and HWI will become an ever-increasing problem for both sexes is surer than the ways in which it will express itself. Empirically, a review of the relevant literature revealed that antecedents had not been systematically assessed and little evidence had been found to establish a strong link between WHI/HWI and more objective 'structural' variables (e.g., age, sex). This introductory chapter provided the following conclusions; (1) WHI and HWI is a problem for both men and women, (2) the antecedents of WHI and HWI needed to be studied in a more systematic fashion, (3) a more comprehensive view of the phenomena can be ascertained by also examining positive spillover. Finally, this chapter introduced the main research questions to be examined in this thesis and the methods to be employed. The research questions were as follows:

- *Research questions one: What are the antecedents and outcomes of WHI/HWI?*



- *Research Question Two: Do WHI/HWI play a full or partially mediational role between work and home characteristics/demands and their respective consequences?*
- *Research Question Three: Do gender differences exist with regard to WHI/HWI? Do such differences reflect gender-role differences with regard to the domains of work and home?*
- *Research Question Four: Can WHI and HWI crossover from one partner to another?*
- *Research Question Five: What is the best way forward in elucidating the work-home nexus? Where do we go from crossover and longitudinal research designs?*

Chapter 2 tested a job and home demands model of WHI/HWI using a sample recruited from the Internet (N= 1264). More specifically, the study evaluated the mediational role of both WHI and HWI between demands and job burnout. Overall, this research made the following contributions: (1) It expanded upon our knowledge of the nature of the mediational effect of WHI and HWI on the demands-burnout relationship, (2) It offered a more precise specification of job and home demands likely to affect burnout, (3) explored possible gender differences in the network of demands, WHI/HWI, and burnout; and (4) It showed the utility of the internet in data collection. Results of this research found mediational evidence for the role of WHI/HWI between demands and burnout. At a specific level, the home demands of males contributed to their experience of burnout at work, while the relationship between WHI and burnout was more influential for women.

In Chapter 3, the previous model was extended and a more complete model of demands and resources among newspaper managers (N= 69) was tested. Managers are increasingly concerned about managing the conflicts experienced in fulfilling the responsibilities of work and family. The problem of balancing these domains arises from work to home interference, which reflects a mutual incompatibility between the demands of the work role and the demands of the home life. The central idea underlying the



theoretical model of this study was that work and home demands lead to work strain and decreased feelings of engagement, while work and home resources lead to increased feelings of engagement and reduced burnout. WHI and HWI were hypothesised to mediate these relationships. An innovation of the study was the assessment of both home demands and positive aspects of work to home interference. Results indicated that negative interference mediated between demands and outcomes, and positive interference mediated between resources and outcomes. This study highlighted the importance of measuring positive concepts in terms of constructing a more balanced picture of work and home interference.

In Chapter 4, the phenomenon of crossover was examined. Crossover - the transmission of stress and strain from one spouse to another – was examined in a sample of information technology (IT) professionals and their working spouses (N = 78). While the previous chapters highlighted the way that job and home stress can have a direct (or within-subject) detrimental effect on the well being of workers, this chapter examined the between-subject effects of stressors and strains. Results of hierarchical regression analysis indicated the following: (1) For IT professionals, work-home interference (WHI) was directly linked to work-related outcomes (i.e., burnout, turnover intention); (2) Crossover effects were found between the home-work interference (HWI) of the IT professional and the exhaustion and turnover intentions of their spouse. For IT professionals, negative affectivity (NA) was a significant predictor of all outcomes, whereas for the spouse NA was only a predictor for exhaustion and psychosomatic health. The relevance of these findings to crossover research is discussed.

In Chapter 5, longitudinal data concerning WHI were examined. A two-wave panel study was carried out to examine reciprocal relationships of job demands/resources and WHI with job burnout and job engagement. Hypotheses were tested in a sample of 193 employees from a pension fund company. Specifically, a job demands and job resources model was examined separately to investigate the causal role of WHI. Hypotheses were tested in a sample of employees from a pension fund company, using structural equation modelling (EM). Participants filled out the questionnaire twice, with a two-year time lag in-between. The results primarily showed that Time 1 job demands were causally related to WHI-negative and burnout at Time 2. Furthermore, reversed



causal effects were found for engagement at Time 1, which was causally related to WHI-positive at Time 2. The mediational effect of WHI was also tested. WHI-positive at Time 2 was found to mediate between job resources at Time 1 and Engagement at Time 2. The reversed effects found for our resources model suggests that positive spillover is antecedent (or triggered) by feelings of engagement at work. Conclusions and implications are discussed in relation to the WHI literature

In chapter 6, work, home and the interaction between the two domains has been recognized as an important issue at a political level, a public level and an academic level. The interface between the two domains has been recognized as a major problem for employees, employers, families, organizations and society at large. While WHI was found to be more prevalent (in agreement with previous research), HWI was identified as a significant problem among all employees' studies. Therefore, for employers to take a separate worlds approach to this issue is to fly in the face of the empirical and anecdotal evidence. The present thesis represents a response to those researchers who call for us to measure both WHI and HWI and also to measure positive spillover. A particular strength of the present research relates to the use of multiple methodologies to assess the phenomena of interest. Beyond this, future studies would benefit from also assessing WHI/HWI in relation to both strategic human resource indicators (at the organizational level) and the impact of increasing elder care (at the community level). This thesis has contributed to the WHI and HWI in terms of theory, methodology and potential future directions to be explored. It has done this by considering the balance and balancing the considerations.



Samenvatting

In onze huidige maatschappij zijn werk en privé de twee belangrijkste gebieden in het leven van een werkend persoon. Dus werkende mannen en vrouwen zijn steeds meer betrokken bij het managen van de ervaren conflicten bij het vervullen van de tweeslachtige vraag en verantwoordelijkheden van werk en privé-aangelegenheden. De onomkeerbare veranderingen in de samenstelling van de beroepsbevolking in combinatie met het groeiend aantal werknemers in niet-traditionele familievormen zorgen voor meer aandacht voor de conflicten die ervaren worden door werkende mannen en vrouwen bij het balanceren van de wedijverende vragen en verantwoordelijkheden van werk en familierollen. Werk-privé storingen (WPS) en privé-werk storingen (PWS) worden ervaren als de druk vanuit beide gebieden onverenigbaar is. Uitgaande van deze stelling is het fenomeen WPS en PWS onderzocht met behulp van meerdere methodologieën en draagt deze studie bij aan het vakgebied middels de introductie van een meer systematische aanpak om te kunnen meten wat aan beide voorafgaat.

In hoofdstuk 1 zijn de belangrijkste problemen met betrekking tot WPS en PWS beschouwd. Het gebied is benaderd vanuit een politieke, sociale, empirische en theoretische optiek. Dit hoofdstuk stelt vast dat WPS en PWS potentiële problemen zijn voor iedereen in de maatschappij. Inderdaad geven de historische en demografische trends aan dat vrouwen in toenemende mate zullen deelnemen aan het arbeidsproces (en hun mannelijke collega's vergezellen). Het feit dat WPS en PWS een groter probleem voor beide seksen wordt, is zekerder dan de wijze waarop het zich zal uiten. Empirisch gezien, toont een overzicht van de relevante literatuur dat elementen die voorafgaan (antecedenten) aan WPS en PWS niet systematisch onderzocht zijn en er weinig bewijs is gevonden om een sterk verband tussen WPS/PWS en meer objectieve 'structurele' variabelen (bijv. leeftijd en sekse) te leggen. Dit hoofdstuk verschaft de volgende conclusies (1) WPS en PWS is een probleem voor zowel mannen als vrouwen, (2) de antecedenten van PWS/WPS dienen op een systematische wijze onderzocht te worden,



(3) een meer samenhangend totaalbeeld kan geschetst worden van het fenomeen door ook te kijken naar positieve effecten. Dit hoofdstuk introduceert de hoofd onderzoeksvraag en de stelling en de methoden die gebruikt worden.

In hoofdstuk 2 is een WPS/PWS-belasting model getest door gebruik te maken van een testgroep, geworven via het Internet. In specifiekere zin evalueerde deze studie de aantoonbare rol van zowel WPS en PWS tussen vereisten en overbelasting vanwege het werk. Dit onderzoek geeft de volgende inzichten: (1) het draagt bij aan kennis van het natuurlijke bemiddelende effect van WPS en PWS op de relatie tussen vereisten en burn-out., (2) het geeft een preciezere specificatie vereisten vanuit werk en privé die vermoedelijk overbelasting veroorzaken, (3) het onderzoekt mogelijke verschillen in de vereisten die de seksen ervaren in relatie tot vereisten, WPS/PWS, en overbelasting; en (4) het laat het nut zien van dataverzameling via internet. De resultaten van dit onderzoek laten een aantoonbaar bewijs zien voor de rol van WPS/PWS met betrekking tot werkbelasting en overbelasting. Hierbij kwam specifiek naar voren dat de thuisbelasting bij mannen bijdroeg aan het gevoel van overbelasting op het werk, terwijl voor vrouwen WPS van invloed was op overbelasting.

In hoofdstuk 3 is het voorgaande model uitgebreid met een completer model van vereisten en middelen onder managers van kranten. Managers zijn in toenemende mate betrokken bij het managen van de conflicten die ervaren worden bij het voldoen aan de verantwoordelijkheden voor werk en privé. Het probleem bij het balanceren van beide gebieden ontstaat door WPS, hetgeen tot uitdrukking komt in wederzijdse onverenigbaarheid tussen de vereisten vanuit de werk- en privésituatie. Het centrale idee dat ten grondslag ligt aan dit onderzoek is dat werk en privé vereisten leiden tot werkbelasting en verminderd gevoel van betrokkenheid terwijl bronnen in de werk- en privésituatie lijden tot een vergroot gevoel van betrokkenheid en verminderde overbelasting. Als hypothese is gesteld dat WPS en PWS deze relaties beïnvloeden. Innovatief aan de studie is het onderzoek naar zowel vereisten vanuit privé als positieve



aspecten van WPS. Resultaten laten zien dat negatieve beïnvloeding gerelateerd is aan vereisten en resultaten, en positieve beïnvloeding bemiddelt tussen bronnen en resultaten. Dit onderzoek benadrukt het belang om positieve aspecten te meten in termen van het construeren van een meer gebalanceerd geheel van WPS.

In hoofdstuk 4 is het onderwerp ‘crossover’ onderzocht. Crossover, het overbrengen van stress en spanning tussen levenspartners, is onderzocht onder een groep IT-professionals en hun werkende partners. In tegenstelling tot de voorgaande hoofdstukken waarin benadrukt wordt op welke wijze werk en privé stress een direct en schadelijk effect hebben op het welzijn van de medewerker, worden in dit hoofdstuk de onderlinge effecten van stress-factoren en spanning onderzocht. Resultaten vanuit een hiërarchische regressie analyse laten zien dat: (1) voor IT-professionals WPS direct gerelateerd is aan werk-gerelateerde verschijnselen (bijv. burnout en intentie om van werkgever te veranderen); (2) ‘crossover’ effecten zijn gevonden tussen WPS van de IT-professionals en de uitputting en de intentie van hun partner om van werkgever te veranderen. Voor IT-professionals blijkt negatieve affectie een belangrijke indicatie van alle uitkomsten, terwijl voor de partner negatieve affectie slechts een indicatie geeft voor uitputting en psychomatische gezondheid. Het belang van deze bevindingen in relatie tot ‘crossover’ is bediscussieerd.

In hoofdstuk 5 zijn longitudinale gegevens met betrekking tot WPS onderzocht. Een panelstudie is op twee momenten uitgevoerd om de wederzijdse relatie van werkvereisten/bronnen en WPS met overbelasting en verbondenheid in de werksituatie in kaart te brengen. Specifiek is een model van vereisten en bronnen vanuit de werksituatie onderzocht om apart het causale verband met WPS in kaart te brengen. Hypotheses zijn getest bij een groep medewerkers van een pensioenfonds, door gebruik te maken van SEM. Deelnemers vulden twee maal een vragenlijst in, met een tussenperiode van twee



jaar. De resultaten laten in eerste instantie zien dat op tijdstip 1 vereisten vanuit het werk causaal verbonden zijn met negatieve WPS en overbelasting op tijdstip 2. Verder zijn tegengestelde causale verbanden gevonden voor verbondenheid met het werk op tijdstip 1, hetgeen causaal verbonden is met positieve WPS op tijdstip 2. Het bemiddelende effect van WPS is ook getest. Positieve WPS op tijdstip 2 is gevonden in relatie tot werkbronnen op tijdstip 1 en betrokkenheid op tijdstip 2. Het tegengestelde effect is gevonden voor het middelen-model, dat suggereert dat positieve ‘spillover’ wordt gestimuleerd (of getriggerd) door gevoelens van engagement (verbondenheid) op het werk. Conclusies en de gevolgen zijn bediscussieerd in relatie tot WPS literatuur.

Als conclusie kan gesteld worden dat werk, privé en de interactie tussen beide erkend is als een belangrijk onderwerp op de politieke, maatschappelijke en academische agenda. De verbinding tussen beide domeinen is erkend als een groot probleem voor werkgevers, werknemers, families, organisaties en de maatschappij als geheel. Terwijl is geconcludeerd dat WPS belangrijker is (in relatie tot voorgaande onderzoeken), is PWS geïdentificeerd als een significant probleem voor alle werknemer studies. Daarom moeten werkgevers stoppen met de benadering alsof het twee verschillende werelden zijn. De huidige stelling is een antwoord voor de onderzoekers die vragen om het meten van WPS en PWS en ook de positieve effecten van spillover meten. Een specifieke kracht van dit onderzoek is het feit dat meerdere methodologieën zijn gebruikt om het fenomeen te bestuderen. Daarnaast kunnen toekomstige studies hun voordeel doen met het benaderen van WPS en PWS in relatie tot zowel strategische human resource indicatoren (op organisatieniveau) als vanuit het perspectief van toenemende zorg voor ouderen (op maatschappij niveau). Deze stelling heeft bijgedragen aan de vorming van theorie en methodologie over WPS en PWS en geeft richting aan mogelijk onderzoek in de toekomst. Het is gedaan door de balans te overwegen en te balanceren tussen de overwegingen.

