

STRAIN-BASED WORK-HOME CONFLICT:
EXAMINING THE RELATIVE CONTRIBUTION OF EXHAUSTION
AND NEGATIVE AFFECT IN THE ASSOCIATION BETWEEN
WORK DEMANDS AND HOME BEHAVIORS

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DEDICATION

I dedicate this thesis to my husband, Matthew. Your love and support are what got me through, even when I didn't think I was going to make it. And through it all, you made me laugh. Thank you.

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ABSTRACT

The present studies explored the underlying mechanisms that explain work-to-home conflict (WHC). Much of existing research is focused on strain-based WHC. Specifically, extant literature emphasizes either an exhaustion-based strain mechanism, using the theory of resource drain (ten Brummelhuis & Bakker, 2012) or a negative affect-based strain mechanism, using the theory of mood spillover (van Emmerik & Jawahar, 2006), or some combination of the two. The present studies are the first to investigate the relative contribution of negative affect and exhaustion simultaneously in the work-home conflict process. Results show that negative affect is a stronger linking mechanism than exhaustion. Rest and positive affect were examined as potential moderators that may buffer against negative affect-based WHC. Rest partially buffered against WHC, but positive affect increased WHC. Future studies will continue to examine the role of negative affect and moderators of WHC.

INTRODUCTION

As societal ideals regarding dual-earner couples have progressed over the past few decades, so too have the number of dual-earner couples in the workforce. According to the US Department of Labor Statistics, from 1977 to 2008, there has been a significant increase in dual-earner couples (US Department of Labor Statistics, 2012). As this burgeoning population of dual-earner households increases, so does the concern that problems at home, stemming from work, are also increasing. Research regarding this interaction between the work and home domain is becoming more popular due to the increasing availability of its subjects and interest (Greenhaus & Beutell, 1985).

According to Pleck (1977), individuals have separate roles they fulfill depending upon which environment they currently inhabit. Unfortunately, roles do not always remain distinct from one another. When the required activities of one role intersect with the duties of another, work-home conflict emerges. Greenhaus and Beutell (1985) define work-home conflict (WHC) as, “A form of interrole conflict in which the role pressures from the work and family domains are mutually incompatible in some respect” (p. 77). WHC can also be referred to as Work-Home Interference—WHI (Demerouti, Bakker, & Bulters, 2004), Work-Family Interference—WFI (Leiter & Durup, 1996), and Work Interference with Family—WIF (Michel, Mitchelson, Kotrba, LeBreton, & Baltes, 2009); all reference the negative interaction between the work and home domains¹.

Although the literature examining the negative interaction between the work and home domain has increased, and there has been a plethora of studies published regarding

¹ The work domain sometimes interacts with the home domain in a positive manner (Wayne, Casper, Matthews, & Allen, 2013; Wayne, Grzywacz, Carlson, & Kacmar, 2007).

the mechanisms of WHC, there is yet to be found a study that simultaneously compares two of the most commonly investigated mechanisms, exhaustion and negative affect. A better understanding of these mechanisms linking the work and home domain could have implications not only for theory on work-to-home conflict but also for applied interventions to combat this negative process. The present study will examine the relative contribution of exhaustion and negative affect as mechanisms in WHC.

Strain-Based WHC

According to Greenhaus and Beutell (1985), there are a number of different types of WHC that could emerge from work roles and home roles interacting negatively: strain-based conflict, time-based conflict and behavior-based conflict. Strain-based conflict is the most widely studied form of WHC (Demerouti et al., 2004; Hockey, 1993; Van Veldhoven, De Jonge, Broersen, Kompier, & Meijman, 2002) and is the focus of this paper.

According to theories in the WHC literature such as the Demand-Induced Strain Compensation model (de Jonge & Dormann, 2006) or the Job Demands-Job Resources model (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001) strain-based WHC frequently emerges when an individual encounters high demands at work and is unable to cope with those demands (Bakker, Demerouti, & Verbeke, 2004; de Jonge & Dormann, 2006). In the WHC literature, there are different ways that demands can exceed resources. According to a meta-analysis by Byron (2005), one particular way of examining how demands exceed resources is with work overload (i.e., the extent to which an individual expresses that they have too much work to do and not enough time to finish it all). Empirical work from this meta-analysis deemed work overload to be an important

predictor of WHC (Bacharach, Bamberger, & Conley, 1991; Beehr, Walsh, & Taber, 1976; Thompson, Kirk, & Brown, 2005). Although wording of the items varies in different measures of work overload, all of the measures commonly assess the feeling of being overloaded at work and unable to cope with the work load.

After encountering high work demands, the individual is likely to experience *strain* at work (Parker, Griffin, Sprigg, & Wall, 2002; Trépanier, Fernet, & Austin, 2013)². Strain, according to the literature, is an umbrella term that encompasses a variety of negative states, for example, negative emotions and exhaustion (Greenhaus & Beutell, 1985; Voydanoff, 2005). Once an individual experiences these strain feelings at work, he/she tends to continue experiencing them at home (Bakker et al., 2004; Marco & Suls, 1993). At home, these strain feelings can manifest into negative attitudes and behaviors that affect both the self and other individuals in the home (Story & Repetti, 2006; Thompson et al., 2005).

There are a number of ways that strain at work can result in negative home outcomes. Two possibilities that are frequently cited in the WHC literature are hostile and withdrawn behavior at home (Bolger, DeLongis, Kessler, & Wethington, 1989; Crouter, Perry-Jenkins, Huston, & Crawford, 1989; Repetti, 1989; Schulz, Cowan, Pape Cowan, & Brennan, 2004; Story & Repetti, 2006). Hostile behavior represents behaviors such as yelling or criticizing a partner whereas withdrawn behavior represents behaviors such as wanting to be left alone or ignoring a partner (Repetti, 1989). Some studies have examined hostile and withdrawn behavior by using self-report measures of WHC. For example, hostile behavior has been examined with the item, “Does stress at work make

² Strain can occur from other role stressors such as role conflict, but they will not be discussed in the present paper.

you irritable at home?” and withdrawn behavior has been examined with the item, “Does your job make you feel too tired to do the things that need attention at home?” (Grzywacz & Marks, 2000; Mennino, Rubin, & Brayfield, 2005; Wayne, Musisca, & Fleeson, 2004). Other studies have examined hostile and withdrawn behaviors directly, with items such as, “I started an argument with my partner” and “I read the paper (or watched TV) when my partner probably would have preferred some attention” (Schulz et al., 2004; Story & Repetti, 2006). Importantly, both methodologies have found that hostile and withdrawn behaviors are important outcomes of work strain.

Hostile and withdrawn behaviors are important outcomes of work overload not only because adults report these behaviors at a high frequency, but also because children notice these behaviors as well. Research regarding family dynamics has found that children are more distressed by their parent’s angry mood and fatigue when they get home from work than they are by the amount of time they spend at work (Sallinen, Rönkä, Kinnunen, & Kokko, 2007). Therefore, it seems important to examine hostility and withdrawal at home as two main outcomes of WHC.

The Strain Construct

It makes sense that exhaustion and negative affect have been historically grouped together in the literature under the umbrella term strain. Both exhaustion and negative affect arise at work when an individual experiences high demands and a subsequent lack of resources. As well, both exhaustion and negative affect predict negative within-domain work outcomes such as burnout and reduced job satisfaction (Bacharach et al., 1991; Bakker et al., 2004; Leiter & Durup, 1996; Spector, Dwyer, & Jex, 1988). Many researchers in the WHC literature treat exhaustion and negative affect as interchangeable

strain subtypes (Greenhaus & Beutell, 1985; Voydanoff, 2005). Some researchers have only measured one strain subtype, but have drawn conclusions about the other. For example, some researchers may only assess exhaustion but draw conclusions about the effects that negative affect had in their study (Thompson et al., 2005), while other researchers may only measure negative affect but draw conclusions regarding the effect that exhaustion had in their study (Heller & Watson, 2005).

Yet, it is possible that exhaustion and negative affect represent distinct mechanisms. Notably, a seminal paper by Edwards and Rothbard (2000) proposed possible linking mechanisms for WHC. One such linking mechanism was resource drain, which arises when an individual's personal resources (i.e., energy resources) are depleted trying to cope with high demands, and negative outcomes occur. Exhaustion is a form of resource drain as it is the direct result of a drain of energy resources (Gross et al., 2011; Lapointe, Vandenberghe, & Panaccio, 2011). Another important linking mechanism proposed by Edwards and Rothbard (2000) is spillover. Spillover involves the transition of negative states or behaviors from one domain to another, and negative affect is frequently cited as a state that has the capacity to spill over across domains (Bowling, Eschleman, & Wang, 2010; Gunthert, Cohen, Butler, & Beck, 2007). It is possible that these two mechanisms are distinct due to the differences in these constructs. The drain of energy resources leading to exhaustion most literally involves a lack of something (i.e., energy), whereas the spillover of negative affect most literally involves an excess of something (i.e., excess negative affect).

Although the constructs are distinct, due to their similar origins at work, it is likely that exhaustion and negative affect frequently co-occur. It would therefore be

impossible to know the relative contribution of each mechanism without examining them simultaneously, something that the WHC literature has yet to do. However, it is still necessary to examine exhaustion and negative affect individually in greater detail as linking mechanisms. Within the work literature, there exists a sizeable amount of both empirical works and theories that suggest that each linking mechanism is an important mechanism in WHC. We will therefore review the exhaustion and negative affect literature separately before testing the possible overlap between these two linking mechanisms.

Exhaustion: A Mechanism of WHC

In the WHC literature, there is both theory and empirical evidence of exhaustion as a possible strain mechanism of the association between work demands and home outcomes (Burke & Mikkelsen, 2006; Michel, Kotrba, Mitchelson, Clark, & Baltes, 2011; Thompson et al., 2005). Exhaustion arises when an individual's energy is drained, and this state means the individual may have little energy left for home and family interactions (Leiter & Durup, 1996).

One of the first resource drain theories in the literature was Hobfoll's (1989) Conservation of Resources theory (COR). His theory suggested that individuals try to protect or maintain their personal resources, but when they are unable to due to high effort or stress, they have further diminished resources due to the effort of trying to protect them; a process he refers to as the loss-spiral. Hockey's (1993) Control Model has a similar section regarding resource drain. He explains that when effort is too great, and control or coping is not a possibility, exhaustion (i.e., drain) and lack of control is a likely outcome. Many other theories of resource drain have followed, such as the Job

Demands-Job Resources theory (Demerouti et al., 2001), the Work-Home Resources Model (ten Brummelhuis & Bakker, 2012), or the Demand Induced Strain Compensation Model (de Jonge & Dormann, 2006) which collectively view WHC as the result of high demands and not enough resources to cope with those demands. These resource drain theories vary in the importance they place on demands at work, or the types of personal resources that can be depleted, or even the way in which the resources are depleted, yet they all view exhaustion from resource drain as a mechanism in WHC.

Much of the existing literature on exhaustion at work examines within-domain work outcomes, rather than home outcomes, as dependent variables (Bakker, Demerouti, Taris, Schaufeli, & Schreurs, 2003; Bakker et al., 2004; Beehr et al., 1976; Ernst Kossek & Ozeki, 1998). These articles most commonly assess exhaustion with the emotional exhaustion subscale of the Maslach Burnout Inventory. This exhaustion is theoretically understood to be a form of burnout and this burnout can affect job performance and job satisfaction (Bacharach et al., 1991; Spector et al., 1988).

Although many authors cite resource drain as the reason for strain-based WHC, and have found that work demands lead to resource drain at work, very few actually measure resource drain (i.e., exhaustion) as a mechanism in the association between work demands and negative home outcomes (Bakker et al., 2004; Demerouti et al., 2004, 2001). The few articles that have examined exhaustion have found support for this strain construct as a linking mechanism. Thompson et al., (2005) found that exhaustion accounted for the association between work overload and family conflict. Hall, Dollard, Tuckey, Winefield, and Thompson (2010) found that emotional exhaustion acted as a mechanism between work demands and self-reported WHC. Roberts and Levenson

(2001) found that on days of greater job stress, exhaustion predicted increased negative arousal at home. Of the many papers that discuss exhaustion as the likely mechanism of WHC, these papers provide direct evidence that exhaustion may be an important mechanism in the association between work demands and home outcomes, however, they are few in number relative to the theoretical emphasis in the literature and more are needed.

Negative Affect: A Mechanism of WHC

There is also both empirical evidence and theory suggesting that negative affect is a possible strain mechanism in the association between work demands and home outcomes (Lambert, 1990; Lavee & Ben-Ari, 2007; Michel et al., 2009; Repetti, 1989; Repetti, Wang, & Saxbe, 2009; van Emmerik & Jawahar, 2006; Williams, Suls, Alliger, Learner, & Wan, 1991). Affective Events Theory (AET; Carlson, Kacmar, Zivnuska, Ferguson, & Whitten, 2011) has been especially influential in the WHC literature as a theoretical perspective on how high work demands can contribute to negative emotions, and how these negative emotions can turn into an overall mood. According to AET, throughout the day negative interactions at work can incite negative emotions. As the day continues, these negative emotions can accumulate into an overall mood and influence attitudes about work (Heller, Judge, & Watson, 2002; Judge & Ilies, 2004; Spector et al., 1988; Van Veldhoven et al., 2002). As moods last longer than emotions, this negative mood can persist into the home (Hedges, Jandorf, & Stone, 1985; Marco & Suls, 1993). Existing research has shown that moods built up during the day can affect home moods (Song, Foo, & Uy, 2008; Williams et al., 1991). Once home, negative moods make emotion elicitation more likely, and this increases the likelihood of

experiencing negative emotions once again (Rosenberg, 1998). Now, these newly incited negative emotions can influence attitudes and behaviors at home (Barsade, 2002; Gassman-Pines, 2013).

Beyond AET, there is very little theory that suggests that negative affect could be an important linking mechanism of WHC. Despite a small theory emphasis, there are a large number of empirical demonstrations of negative affect as an important mechanism. Specifically, support has been found using the Positive and Negative Affect Scale. Negative affect has been found as a mechanism in the association between work demands and negative home marital interactions (Lavee & Ben-Ari, 2007; Schulz et al., 2004; Story & Repetti, 2006), and predicts increased reports of WHC (Allen et al., 2012; Ilies et al., 2007; Ilies, Wilson, & Wagner, 2009; Michel & Clark, 2009; Williams & Alliger, 1994). These are a few of the many articles that suggest negative affect is an important mechanism of WHC.

Relative Contributions of Exhaustion and Negative Affect

As exhaustion and negative affect both arise from work overload, it is likely that these two subtypes of strain frequently co-occur. Therefore, it is important to examine the relative contribution of both exhaustion and negative affect simultaneously in order to evaluate the size of each contribution to WHC. The present studies are the first to do so.

It is possible that exhaustion and negative affect make equally large contributions to the association between work demands and home behaviors. It may be the case that both of these strains persist into the home domain. Negative affect could persist from work to home as an underlying mood (Williams & Alliger, 1994; Williams et al., 1991) and exhaustion could persist as a continued lack of energy resources (Thompson et al.,

2005). Once home, both forms of strain may affect both home behaviors. Hostility could be predicted by both exhaustion and negative affect because an individual who is tired and in a bad mood may aggressively react to his or her partner in order to get some space. As well, withdrawal could be predicted by both states because an individual who is tired and in a bad mood may avoid interacting with his or her partner in order to try to recover. Alternatively, it may be that both exhaustion and negative affect from work persist into the home domain, but that each is associated with a different negative home behavior. Exhaustion may predict withdrawal, but not hostility, because the individual may be too tired to interact, whereas negative affect may predict hostility, but not withdrawal, because the individual's angry mood may make him or her more hostile. Interestingly, previous research has found evidence for the possibility that each state will only affect one behavior, in that sleep deprivation (i.e., exhaustion) did not predict aggression (Vohs, Glass, Maddox, & Markman, 2011), and negative emotions predicted hostility (Story & Repetti, 2006).

Although it is possible that negative affect and exhaustion contribute equally to WHC, it is also possible that one of these linking mechanisms makes a much larger contribution to WHC than the other. Although previous research has found support for these mechanisms independently, it may be that the only reason that one mechanism appears to have effects on home outcomes is because it is associated with the other mechanism. As negative affect and exhaustion arise together at work, it is possible that both contribute equally to home behaviors. Yet so far, these mechanisms have not been measured together in the same study, therefore, we do not yet know if they are each contributing separate variance to home behaviors.

It may be the case that exhaustion more strongly predicts home behaviors than negative affect. One way this would occur is if negative affect is more easily interrupted than exhaustion. It is possible that negative affect is a more transient state as it travels from the work to home domain than was previously thought. Research shows that psychologically distancing oneself from work-related thoughts can buffer the negative affect spillover process (Sonnentag & Binnewies, 2013). As well, even a small positive interaction, such as support from a co-worker or spouse, might “reset” an individual and reduce negative affect (ten Brummelhuis & Bakker, 2012). Exhaustion, on the other hand, may be as immutable a state as was previously thought. Researchers have argued that energy is a finite personal resource that needs time to replenish (Edwards & Rothbard, 2000). According to the limited resource model of self-depletion theory, once a resource (i.e., energy) is depleted, the individual cannot use that resource in subsequent interactions (Baumeister, Bratslavsky, Muraven, & Tice, 1998). This suggests that once an individual loses their energy resources, they would be unable to create new resources at home, and this resulting exhaustion would contribute to hostile and withdrawn behaviors at home. If exhaustion is immutable, and negative affect is a transient state, then this scenario represents a possibility where exhaustion from work is the larger mechanism in the association between work demands and home outcomes.

On the other hand, it may be the case that negative affect is a stronger predictor of home behaviors than exhaustion, when the two are tested as simultaneous mechanisms. One way this would occur is if exhaustion is more easily interruptible than negative affect, due to its transient nature from work to home. Perceived exhaustion (what is most commonly assessed) may not be an accurate predictor of actual exhaustion, and may not

represent an actual loss of resources (Masicampo, Martin, & Anderson, under review). Therefore, feeling tired may not mean that one is actually drained of energy (Clarkson, Hirt, Jia, & Alexander, 2010). In this case, individuals who “feel” extremely tired may be able to very quickly regain their energy and interact well (Beedie & Lane, 2012). Research has shown that restorative acts can reenergize a previously exhausted and depleted individual (Tyler & Burns, 2008). Negative affect, on the other hand, may be as immutable a state as previous research would suggest. Research shows that moods are enduring (Marco & Suls, 1993) and might be difficult to change. If negative affect is stable from work to home while exhaustion is transient, then this scenario represents a possibility where negative affect from work is the larger mechanism in the association between work demands and home outcomes.

A greater understanding of the WHC mechanisms could have profound implications for existing WHC theories, many of which argue that a lack of resources is the primary linking mechanism in WHC (de Jonge & Dormann, 2006; ten Brummelhuis & Bakker, 2012). As well, a better understanding of the mechanisms of WHC could be applied to a variety of research domains, including intervention-based research. The findings of the present studies could better educate applied psychologists as they seek to help distressed couples. For example, if negative affect is the stronger mechanism, then this would suggest that doing or thinking about positive and fun things between leaving work and going home might help buffer the WHC process. Alternatively, if exhaustion is a stronger mechanism, this would suggest that relaxing or resting might help buffer the WHC process. A test of these buffering variables, as well as a test of negative affect and

exhaustion as simultaneous linking mechanisms in the WHC process would improve our overall knowledge of this negative process.

The Present Studies

The present three studies sought to explore a better understanding of the mechanisms involved in WHC. These studies employed a survey methodology, examining full time working heterosexual individuals in an exclusive relationship who reported on their work and home experiences. We expected to replicate four past correlational research findings (see Figure 1). First, we expected to replicate that work overload is associated with hostility and withdrawal at home (Repetti, 1989; Schulz et al., 2004; Story & Repetti, 2006). Second, we expected to replicate that work overload is correlated with negative affect (Ilies et al., 2007; Story & Repetti, 2006) and exhaustion at work (Leiter & Durup, 1996; Thompson et al., 2005). Third, we expected to replicate that negative affect and exhaustion are moderately correlated with each other (Adil & Kamal, 2012; Kafetsios, Nezlek, & Vassilakou, 2012). Fourth, we expected to replicate that home behaviors are correlated with exhaustion (Danner-Vlaardingerbroek, Kluwer, van Steenbergen, & van der Lippe, 2013; Jackson & Maslach, 1982) and negative affect (Ilies et al., 2007; Schulz et al., 2004).

More importantly, the present studies sought to explore a better understanding of the mechanisms involved in WHC with one primary research question. We sought to explore the relative contribution of negative affect and exhaustion in the link between the day's work overload and the day's home behaviors, when the two are tested as simultaneous mechanisms. Study 1 investigated the relative contribution of negative affect and exhaustion in the association between one day's work overload and home

behaviors. Using a retrospective methodology, Study 1 participants were queried in the evening about their work and home experiences that day. Study 2 was designed to replicate Study 1 findings, controlling for possible sources of bias present in Study 1. In Study 2, participants answered work questions immediately after work, and home questions later in the evening at home. As well, we controlled for baseline levels of the variables assessed at an earlier time point. Study 3 attempted to expand upon the findings of Studies 1 and 2 by examining potential moderators of strain-based WHC. The purpose of Study 3 was to determine if resting or experiencing positive emotions would help buffer against the deleterious effects of high work demands on home behaviors.

Figure 1

Correlational Findings from Past Research

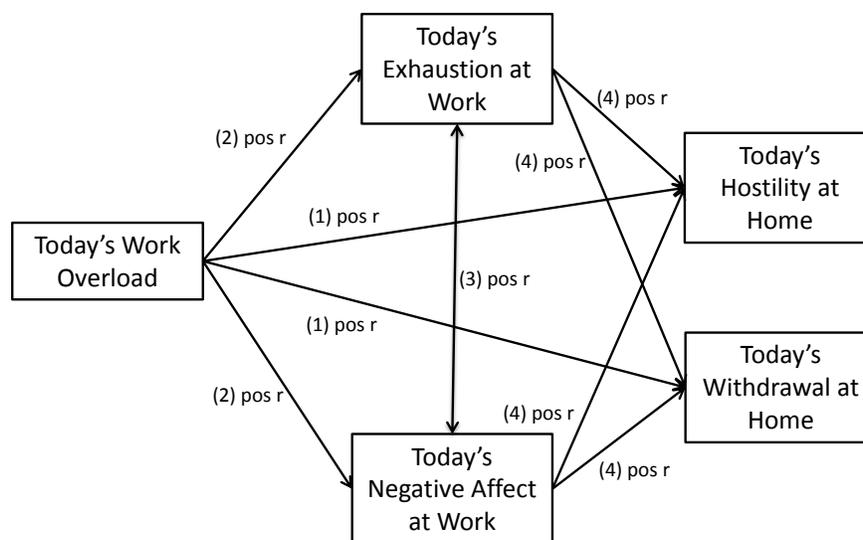


Figure 1. A diagram of the four correlational findings from past research. Note that all four findings concern Pearson correlations, rather than regression coefficients. Past research has not yet tested exhaustion and negative affect as simultaneous mechanisms, thus no regression weights are shown.

STUDY 1

The purpose of Study 1 was to examine our central research question; the relative contribution of negative affect and exhaustion as simultaneous mechanisms in the association between work overload and home behaviors. In Study 1, participants completed a questionnaire at the end of their workday day between 8:30 pm and 12am. They answered questions regarding their work overload that day, negative affect and exhaustion at work that day, as well as their hostility and withdrawal at home that evening.

Method

Participants. Participants were 200 (95 males, 105 females) individuals who were recruited for this online study using Mechanical Turk over the course of 5 weeks. Based on the eligibility requirements, participants completed the survey if they were full-time working adults (working 30 hours or more per week). Nine participants did not meet this requirement and were excluded from the analyses, leaving 191 participants. Participants were 18 years of age or older, and in exclusive, heterosexual, cohabitating romantic relationships. Participants were a community sample, ranging in age from 23-68 years ($M = 32.37$, $SD = 9.14$). In regards to ethnicity, 83% were White, 9% were Black, 3.5% were Asian, 2% were Hispanic, 1% were Alaskan/Native American, 1% were Middle Eastern, and .5% reported other ethnicity. Average length of the romantic relationship was 7.09 years ($SD = 6.57$), while average length of cohabitation was 5.71 years ($SD = 6.71$). Median income was \$56,000 ($M = 63,459$, $SD = 45,005$). Thus, the sample was primarily white, upper middle class individuals.

Procedure. Participants were only allowed to complete the survey between the hours of 8:30 pm and 12 am, in order to assess retrospective reports of their workday as well as their home interactions that evening. First participants completed a variety of background measures, including a measure of trait neuroticism. Participants next completed a variety of questions regarding their current workday, as well as their current evening at home. In regards to the present study, results examined the constructs of work overload, exhaustion, negative affect, hostility, and withdrawal.

Control variable.

Neuroticism. We controlled for the variable trait neuroticism. It is possible that the association between work and home may depend on trait negative affectivity (i.e., neuroticism), and may lead to spurious results (Heller et al., 2002). Recent research has shown that negative affectivity is consistently related to increased WHC (Bruck & Allen, 2003; Wayne et al., 2004). Therefore, all analyses controlled for the main effect of neuroticism on WHC³.

Neuroticism was assessed using the personality inventory, the Big Five Aspects Scales (BFAS; DeYoung, Quilty, & Peterson, 2007). This 100-item measure assesses the Big Five personality traits: openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism. There are 20 neuroticism items. An example neuroticism item is, "I seldom feel blue." Participants responded using a 5-point scale ranging from 1 "strongly disagree" to 5 "strongly agree." Items were reverse-scored and averaged such that higher scores indicated higher levels of neuroticism ($\alpha = .90$).

³ Neuroticism was also examined as a moderator of WHC in the present study. Neuroticism did not ever moderate the association between work demands and home behaviors.

Work measures.

Work overload. Work overload was assessed with a 4-item measure, which was adapted from a 3-item measure of overload (Beehr et al., 1976). The scale measures participants' experiences of having too much work to do and not enough time to do it all. An example item was, "I had an excessive amount of work to do today at my job." Participants responded using a 5-point scale ranging from 1 "strongly disagree" to 5 "strongly agree." One item was reversed scored. Items were averaged to create a work overload score ($\alpha = .88$). All items are listed in Appendix A.

Exhaustion at work. Exhaustion was assessed with a 4-item measure, which was adapted from the exhaustion subscale of the Maslach Burnout Inventory (MBI; Maslach & Jackson, 1981). An example item was, "I felt more and more used up, today at work." Participants were asked to rate their agreement with the exhaustion items on a 5-point likert scale from 1 "strongly disagree" to 5 "strongly agree." Items were averaged together to create an exhaustion score ($\alpha = .94$). All items are listed in Appendix B.

Negative affect at work. Negative affect was assessed with the Global self-reported Affect Balance scale (Diener & Seligman, 2002) which is a 24-item measure that assesses an individual's positive and negative emotional states. In regards to the present study, items were phrased so participants responded to how they felt "today at work." The scale contains 16 negative emotion items that assess 4 negative emotion facets: anxiety, anger, sadness, and guilt. An example item was, "I felt anger at work today." Items were rated on a 1 "never" to 7 "always" likert scale. The 16 negative emotion items were averaged to create a composite score ($\alpha = .96$). All items are listed in Appendix C.

Home measures.

Hostility at home. Hostile behavior at home was assessed with an 8-item measure, adapted from Repetti (1989). An example hostility item was, “Today at home, I criticized my partner.” Participants responded on a 1 “never” to 5 “very often” scale, regarding how hostile they behaved toward their partner that evening at home. The 8 hostility items were averaged to create a composite hostility score ($\alpha = .89$). All items are listed in Appendix D.

Withdrawal at home. Withdrawn behavior at home was also assessed with an 8-item measure, adapted from Repetti (1989). An example withdrawal item was, “Today at home, I kept to myself when my partner probably would have preferred some attention.” The 8 withdrawal items were averaged to create a composite withdrawal score ($\alpha = .90$). All items are listed in Appendix E.

Results

Descriptive statistics and correlations. Table I contains the descriptive statistics for the study variables including means, standard deviations, and skew. The present sample was not a significantly distressed sample, as they were not high on any of the study variables. Importantly, there was variability for all measures. We noticed that there was considerable positive skew in the following variables: negative affect at work, hostility at home and withdrawal at home. These three variables also had the lowest means. Because these variables violated the normality assumption required for regression analyses, we log-transformed these variables. All subsequent analyses were conducted using the transformed variables for negative affect, hostility and withdrawal.

Table I
Descriptive Statistics of Study 1 Variables

Variables	Mean (SD)	Skew (SE)
Trait Neuroticism (1-5)	2.60 (0.69)	.06 (0.17)
Work Overload (1-5)	2.68 (1.11)	.39 (0.18)
Negative Affect at Work (1-7)	2.12 (1.31)	1.52 (0.18)
Exhaustion at Work (1-5)	2.89 (1.18)	.04 (0.18)
Hostility at Home (1-5)	1.91 (0.82)	.80 (0.17)
Withdrawal at Home (1-5)	2.12 (0.91)	.55 (0.17)

Note. Range of the scale is in parentheses.

Table II, below the diagonal, contains correlations for the study variables. There seemed to be evidence of WHC as work overload was positively marginally associated with hostility at home and significantly associated with withdrawal at home, replicating past research (Repetti, 1989; Schulz et al., 2004; Story & Repetti, 2006). There was also evidence that work demands produced strain as work overload was positively associated with both negative affect and exhaustion at work (Ilies et al., 2007; Leiter & Durup, 1996; Story & Repetti, 2006; Thompson et al., 2005). There was evidence of co-variance of the strain mechanisms as negative affect and exhaustion were positively associated with one another, replicating past results (Adil & Kamal, 2012; Kafetsios et al., 2012). Finally, there was evidence that these strains were associated with home behaviors. Negative affect was positively associated with both hostility and withdrawal at home, while

exhaustion was only associated with withdrawal at home, partially replicating past results (Danner-Vlaardingerbroek et al., 2013).

Table II, upper diagonal, contains partial correlations of the study variables while controlling for trait neuroticism. When trait neuroticism was controlled for, the marginal association between work overload and hostility at home dropped to nonsignificant. As well, the significant association between exhaustion and withdrawal at home dropped to nonsignificant when trait neuroticism was controlled for.

Table II
Correlations of Study 1 Variables

Variables	1	2	3	4	5
1. Work Overload	-	.40*	.45*	.04	.15*
2. Negative Affect at Work (log)	.46*	-	.36*	.21*	.25*
3. Exhaustion at Work	.49*	.45*	-	-.01	.09
4. Hostility at Home (log)	.13 [†]	.35*	.11	-	.66*
5. Withdrawal at Home (log)	.24*	.39*	.21*	.71*	-
6. Trait Neuroticism	.26*	.48*	.31*	.37*	.42*

Note. Below diagonal are Pearson correlations of study variables. Above diagonal are partial correlations controlling for trait neuroticism. * $p < .05$; [†] $p < .1$

Testing linking mechanisms while controlling for trait neuroticism. We proceeded to test exhaustion and negative affect as mechanisms in the association

between work overload and home behaviors, while controlling for trait neuroticism (see Figure 2, Table III).

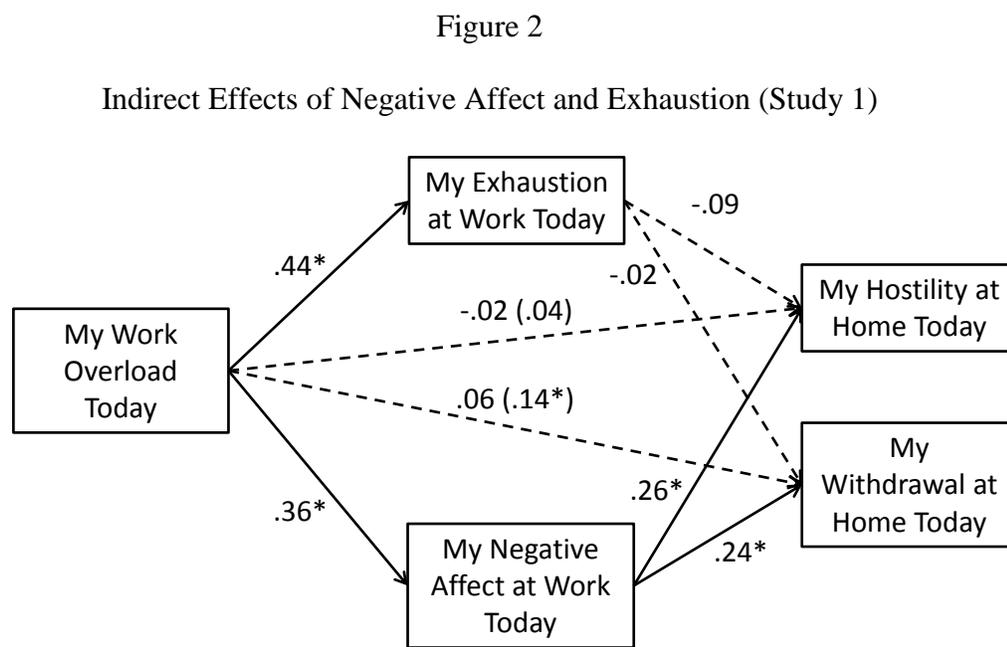


Figure 2. A diagram of the Study 1 regression analyses testing negative affect and exhaustion as simultaneous mechanisms of the within-day association between work overload and home behaviors. The control variable trait neuroticism is not shown in the figure, but was included in the analyses.

Strain at work. As shown in Columns 1 and 2 of Table III, Model 1, work overload significantly predicted negative affect at work, $\beta = .36$, $t(188) = 5.90$, $p < .001$, and exhaustion at work, $\beta = .44$, $t(188) = 6.82$, $p < .001$, controlling for trait neuroticism.

Hostility at home. There was not a significant relationship between work overload and hostility at home when trait neuroticism was controlled for. Nevertheless, we examined possible indirect paths between work overload and hostility at home via negative affect and/or exhaustion (Danner-Vlaardingierbroek et al., 2013; Schulz et al., 2004). We ran a regression and predicted hostility at home from work overload,

Table III

One Day's Exhaustion and Negative affect

Predictor	Negative Affect at Work	Exhaustion at Work	Hostility at Home	Withdrawal at Home
Model 1				
Trait Neuroticism ^a	.38*	.20*	.36*	.37*
Work Overload	.36*	.44*	.04	.14*
Model 2				
Trait Neuroticism ^a			.28*	.29*
Work Overload			-.02	.06
Exhaustion at Work			-.09	-.02
Negative Affect at Work			.26*	.24*
<i>N</i>	190	190	190	190

Note. ^aControl variable. All numbers represent Betas. * $p < .05$

exhaustion and negative affect, controlling for trait neuroticism, as shown in Column 2 of Table III, Model 2. Exhaustion was not a significant predictor of hostility, $\beta = -.09$, $t(186) = -1.06$, $p = .29$. The bootstrapping test of the indirect effect for exhaustion was $-.04$ ($SE = .03$), and the 95% confidence interval included zero, 95% CI $[-.09, .01]$, indicating a non-significant indirect path. Negative affect, however, significantly predicted hostility, $\beta = .26$, $t(186) = 3.09$, $p < .01$. The indirect effect for negative affect was $.06$ ($SE = .03$), and the 95% confidence interval did not include zero, 95% CI $[.01, .13]$, indicating a significant indirect path.

Withdrawal at home. There was a significant relationship between work overload and withdrawal at home when trait neuroticism was controlled for. We examined possible indirect paths between work overload and withdrawal at home via negative affect and/or exhaustion. We regressed work overload, negative affect, and exhaustion on withdrawal at home, while controlling for trait neuroticism, as shown in Column 4 of Table III, Model 2. Exhaustion was not a significant predictor of

withdrawal with negative affect in the model, $\beta = -.02$, $t(186) = -.20$, $p = .84$. The bootstrapping test of the indirect effect for exhaustion was $-.002$ ($SE = .03$), and the 95% confidence interval included zero, 95% CI $[-.05, .06]$, indicating a non-significant indirect path. Negative affect, however, significantly predicted withdrawal, $\beta = .24$, $t(186) = 2.86$, $p < .01$. The indirect effect for negative affect was $.06$ ($SE = .03$), and the 95% confidence interval did not include zero, 95% CI $[.01, .12]$, indicating a significant indirect path.

Discussion

The results showed that work overload predicted exhaustion and negative affect at work. Negative affect predicted hostility and withdrawal at home, even when controlling for trait neuroticism. Exhaustion, however, never predicted hostility at home, and its association with withdrawal disappeared when controlling for trait neuroticism. In consequence, there was a significant indirect path between work demands and home behaviors for negative affect but there was no significant indirect effect for exhaustion.

The fact that negative affect was a stronger linking mechanism in the association between work demands and home behaviors suggests that negative affect is a state that persists from work to home, and is important in the home environment. Exhaustion, in contrast, may not have persisted as strongly from work to home. It is possible that people left work feeling tired, but were able to find the energy to interact with their partner once at home. However, there are three possibilities that exist that we must examine before concluding these findings.

The first possibility that must be considered is that the link between negative affect and home behaviors exists because of an underlying third variable: trait levels of

negative affect. Note that this explanation requires that trait negative affect has a stronger effect on states within domains than does trait exhaustion (otherwise trait exhaustion would also have created a seeming link between exhaustion at work and home behaviors). It is also important to note that our findings held when we controlled for trait neuroticism, widely considered to be highly related to trait negative affect (Watson, Clark, & Tellegen, 1988). Although neuroticism is highly related to negative affect, we would have more confidence in our results if we controlled for general levels of negative affect, rather than neuroticism. As well, we could state our conclusions more strongly, if we controlled for general levels of exhaustion, in order to interpret the impact exhaustion at work has on home behaviors in the context of a single day.

A second possibility for the seemingly high role of negative affect is that retrospective reports of one's workday could have been confounded by one's present state at home while the survey was completed. This study assessed both work and home variables at home in the evening, thus states at home could have biased reports of states at work. An individual who experienced negative affect at home might have had a bias to recall more negative affect at work than was really present, inflating the negative affect indirect effect. It is important to note that for this kind of bias explanation to explain the observed patterns, it would also have to be the case that (a) negative affect at home does not retrospectively bias reports of exhaustion at work and (b) exhaustion at home does not retrospectively bias reports of exhaustion at work. Yet, we could have greater confidence in our results if we measured work variables immediately after work and home variables later that evening at home.

A third possible explanation for the seemingly high role of negative affect is that the causal direction is truly reversed and that what we actually found was Home-to-Work Conflict instead of Work-to-Home Conflict. This would suggest individuals who experience negative interactions in the home may go to sleep angry, wake up angry and experience negative affect at work due to the previous evening. It is possible that this effect is more persistent than exhaustion from the evening before. Due to the methodology of Study 1, we cannot distinguish WHC from HWC because all of the variables were reported at the same time point, which does not allow us to partial out baseline levels of each variable. We would like to be able to say that the negative affect experienced at work on a given day, relative to the negative affect experienced on an average day, predicts hostile and withdrawn behavior that evening, relative to the person's average amounts of hostility and withdrawal. Thus, in order to state our conclusions with greater confidence, we would need to measure baseline levels of all variables in addition to separating work and home measurements on the workday in question.

Thus, although Study 1 found that the relative contribution of negative affect as a linking mechanism in WHC was larger than the relative contribution for exhaustion, these results were treated as preliminary due to the aforementioned limitations. Study 2 attempted to remedy these limitations.

STUDY 2

Study 2 expanded upon the findings of Study 1 and examined the relative contribution of negative affect and exhaustion in the association between one's day reports of work overload and home behaviors, while also controlling for baseline levels of the variables. In Study 2, we separated the domain specific questions into two time points (immediately after work for work-related questions, and later in the evening for home-related questions). In Study 2, we queried participants on a weekend for an intake portion, in order to assess average levels of work and home experiences, and later we queried them on a workday, in order to assess one day's fluctuations of our variables. In this way, we were able to examine and interpret the process of WHC on a truly daily level. Controlling for baseline measures, and examining WHC that has occurred from a single day to the evening, also moves us toward the direction of causal interpretations.

Method

Participants. Participants were 99 (51 males, 48 females) individuals who were recruited using the survey company Socialsci.com over the course of 3 weeks. Only participants with complete data were retained, with an overall attrition rate of 48%. Importantly, none of the study variables consistently varied for participants who completed the study versus participants who did not, $t < -1.59$, $p > .12$. Based on our selection criteria, Socialsci recruited participants who were full-time working adults, 18 years of age or older, and in exclusive, heterosexual, cohabitating romantic relationships. Participants were a community sample, ranging in age from 18-65 years ($M = 33.78$, $SD = 10.06$). In regards to ethnicity, 79.3% were White, 6.1% were Asian, 5.1% were Black, 4% reported multi-ethnicity, 3.5% were Hispanic, and 2% reported other ethnicity.

Participants had completed a median of 16 years of education ($M = 15.79$, $SD = 4.81$). Average length of the romantic relationship was 8.61 years ($SD = 7.91$), while average length of cohabitation was 7.11 years ($SD = 7.75$). In regards to types of occupations, 70.7% performed mental labor at work (e.g., computer or desk work), 21.7% performed a social occupation (e.g., sales, customer service, entertainment, or service) and 7.6% of participants expressed performing physical labor at work (e.g., manufacturing, construction, or maintenance). Median income was \$40,000 ($M = 47,418$, $SD = 40,550$). Thus, the sample was primarily white, college educated, and middle class individuals.

Procedure. Participants were asked to complete an online intake survey on either a Saturday or Sunday, at any time during the day. The survey began with participants completing a number of reaction time tasks, which are not relevant to the present study. Participants then completed questionnaires about work and home (as in Study 1), answering in regards to their average workday and evening at home, not their current day. From these we obtained baseline measures of work overload, exhaustion, negative affect, hostility, and withdrawal.

Baseline work overload ($\alpha = .87$), exhaustion ($\alpha = .92$), and negative affect ($\alpha = .95$) were assessed with the same measures as those in Study 1, this time adapted for “in general.” For example, a baseline work overload item was, “In general, I have too much to do and not enough time to do it at work.” Baseline hostility ($\alpha = .90$), and withdrawal ($\alpha = .92$) were also assessed with the same measures as those used in Study 1, adapted for “in general.”

On Tuesday following the intake measures, participants completed two more surveys at two separate time points. It is possible that participants believe they

experience more dysphoric mood on Mondays rather than other days of the week, therefore participants were queried on a Tuesday instead (Stone, Hedges, Neale, & Satin, 1985). Participants completed a work survey between the hours of 5 and 7 pm (at the end of the workday), and they completed a home survey between the hours of 8 and 10 pm (after they had spent some time at home with their partner). All Tuesday questionnaires consisted of the same work and home measures from the intake session, formulated for the current day. For example, a baseline work overload item of, “In general, I have too much to do and not enough time to do it at work,” is comparable to a daily item of, “Today at work, I had too much to do and not enough time to do it.” The alphas of the Tuesday weekday measures are as follows: work overload (.93), exhaustion (.93), negative affect (.96), hostility (.90), and withdrawal (.93).

Results

Descriptive statistics and correlations. Table IV contains the descriptive statistics for the baseline and day variables, including means, standard deviations, and skew. Means for all variables were highly similar to those found in Study 1. As in Study 1, there was significant positive skew for negative affect, hostility and withdrawal in these data. Thus these variables were log-transformed. Only those individuals who completed the entirety of our study were included in the analyses.

Table V contains within-day correlations for the Tuesday weekday variables. In the present study, weekday work overload had small positive non-significant correlations with hostility and withdrawal at home that day, which did not replicate previous findings. However, there was evidence that demands produce strain at work in that weekday work

Table IV
Descriptive Statistics of Study 2 Variables

Variables	Mean (SD)	Skew (SE)
Weekday		
Work Overload (1-5)	2.63 (1.13)	.39 (0.22)
Negative Affect at Work (1-7)	1.95 (1.16)	1.92 (0.22)
Exhaustion at Work (1-5)	2.80 (1.13)	-.004 (0.22)
Hostility at Home (1-5)	1.42 (0.60)	2.14 (0.24)
Withdrawal at Home (1-5)	1.49 (0.70)	1.89 (0.24)
Baseline		
Work Overload (1-5)	2.86 (1.06)	.20 (0.18)
Negative Affect at Work (1-7)	2.32 (1.10)	1.13 (0.18)
Exhaustion at Work (1-5)	3.26 (1.02)	-.21 (0.18)
Hostility at Home (1-5)	2.12 (0.71)	.43 (0.18)
Withdrawal at Home (1-5)	2.02 (0.71)	.62 (0.18)

Note. Range of the scale is in parentheses.

overload was positively significantly associated with exhaustion and negative affect at work that day, replicating past research. There was evidence of strain covariance in that weekday negative affect and exhaustion were positively significantly correlated with one another. Finally, there was partial replication that strain at work predicts negative home behaviors in that negative affect was positively significantly associated with the home

behaviors hostility and withdrawal that day. However, exhaustion was not significantly associated with either hostility or withdrawal that day.

Table V
Correlations of Study 2 Weekday Variables

Weekday Variables	1	2	3	4
1. Work Overload	-			
2. Negative Affect at Work (log)	.43*	-		
3. Exhaustion at Work	.71*	.44*	-	
4. Hostility at Home (log)	.15	.39*	.15	-
5. Withdrawal at Home (log)	.15	.40*	.10	.65*

Note. Numbers represent Pearson correlations. * $p < .05$

Table VI contains the inter-correlations of the baseline variables. The pattern of relationships mirrored the patterns we saw with the Tuesday weekday variables.

However, baseline work overload was positively significantly associated with both baseline hostility and withdrawal at home. As well, baseline exhaustion at work was significantly associated with both baseline hostility and withdrawal at home.

Table VII contains the correlations between the weekday and baseline variables. All correlations between the baseline and weekday variables were significant with correlations ranging from .42 to .68.

Table VI
Correlations of Study 2 Baseline Variables

Baseline Variables	1	2	3	4
1. Work Overload	-			
2. Negative Affect at Work (log)	.38*	-		
3. Exhaustion at Work	.53*	.49*	-	
4. Hostility at Home (log)	.23*	.44*	.25*	-
5. Withdrawal at Home (log)	.33*	.50*	.24*	.79*

Note. Numbers represent Pearson correlations. * $p < .05$

Modeling weekday WHC. We proceeded to test weekday exhaustion and negative affect at work as mechanisms in the association between weekday work overload and weekday home behaviors, while controlling for the baseline variables (see Figure 3, Table VIII).

Strain At work. As shown in Columns 1 and 2 of Table VIII, Model 1, weekday work overload significantly predicted weekday negative affect at work, with the corresponding baseline variables in the model, $\beta = .30$, $t(95) = 2.69$, $p < .01$. As well, weekday work overload significantly predicted weekday exhaustion with the corresponding baseline variables in the model, $\beta = .66$, $t(95) = 6.98$, $p < .001$.

Table VII

Correlations of Study 2 Weekday and Baseline Variables

	Weekday Variables				
	Work Overload	Negative Affect at Work	Exhaustion at Work	Hostility at Home	Withdrawal at Home
Baseline Variables					
Work Overload	.68*	.44*	.53*	.09	.17 [†]
Negative Affect at Work	.20 [†]	.53*	.25*	.19 [†]	.14
Exhaustion at Work	.33*	.40*	.45*	.04	.10
Hostility at Home	.14	.27*	.22*	.42*	.40*
Withdrawal at Home	.22*	.32*	.21*	.33*	.47*

Note. All numbers represent Pearson correlations. * $p < .05$; [†] $p < .1$

Hostility at home. As shown in Column 3 of Table VIII, Model 1, weekday work overload did not predict weekday hostility, $\beta = .18$, $t(95) = 1.44$, $p = .15$, with the corresponding baseline variables in the model. However, with the use of the bootstrapping test, we can still examine the indirect effect of exhaustion and negative affect. In order to examine a possible indirect path between weekday work overload and weekday hostility at home via negative affect and/or exhaustion, we predicted weekday hostility from weekday work overload, negative affect and exhaustion, while controlling for the baseline variables (Table VIII, Column 3, Model 2). The bootstrapping test of the

Figure 3
Indirect Effects of Negative affect and Exhaustion (Study 2)

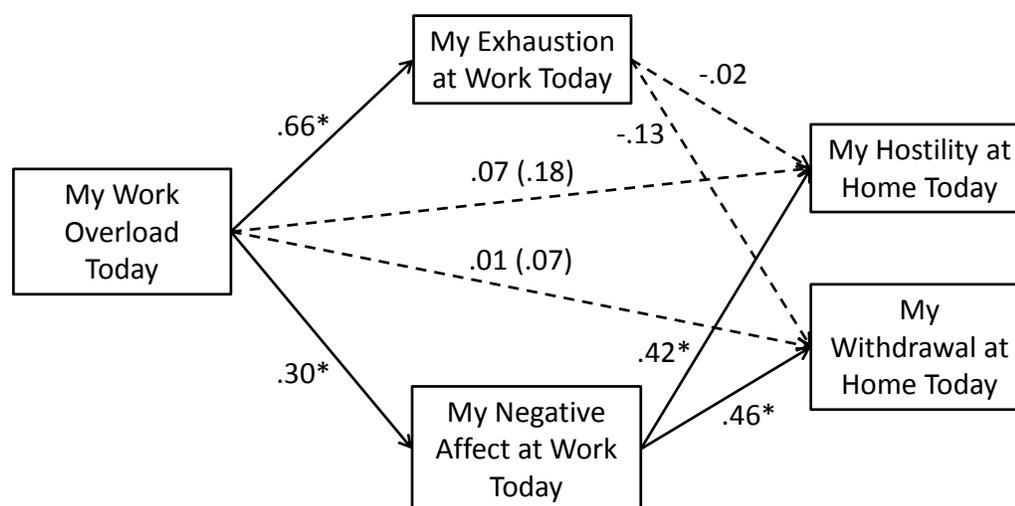


Figure 3. A diagram of the Study 2 regression analyses testing negative affect and exhaustion as simultaneous mechanisms of the within-day association between work overload and home behaviors. The baseline control variables are not shown in the figure, but were included in the analyses.

indirect effect for weekday exhaustion was $-.002$ ($SE = .01$), and the 95% confidence interval included zero, 95% CI $[-.03, .02]$, indicating a non-significant indirect path. However, the indirect effect for negative affect was $.02$ ($SE = .01$), and the 95% confidence interval did not include zero, 95% CI $[.002, .04]$, indicating a significant indirect path.

Withdrawal at home. As shown in Column 4 of Table VIII, Model 1, weekday work overload was not a significant predictor of weekday withdrawal with the corresponding baseline variables in the model, $\beta = .07$, $t(95) = .59$, $p = .56$. To examine a possible indirect path between weekday work overload and weekday withdrawal at home via exhaustion and/or negative affect, we predicted weekday withdrawal at home from weekday work overload, while controlling for the corresponding baseline variables

Table VIII

One Day's Exhaustion and Negative affect, Controlling for Baseline

Predictor	Weekday Negative Affect	Weekday Exhaustion	Weekday Hostility	Weekday Withdrawal
Model 1				
Weekday Work Overload	.30*	.66*	.18	.07
Baseline Work Overload	.07	-.06	-.13	-.03
Baseline DV	.45*	.26*	.42*	.46*
Model 2				
Weekday Work Overload			.07	.01
Baseline Work Overload			-.11	-.02
Baseline DV			.41*	.51*
Weekday Exhaustion at Work			-.02	-.13
Baseline Exhaustion at Work			-.13	.03
Weekday Negative Affect at Work			.42*	.46*
Baseline Negative Affect at Work			-.12	-.34*
<i>N</i>	98	98	98	98

Note. ^aControl variable. All numbers represent Betas. * $p < .05$; [†] $p < .01$.

(Table VIII, Column 4, Model 2). The bootstrapping test of the indirect effect for weekday exhaustion was $-.01$ ($SE = .01$), and the 95% confidence interval included zero, 95% CI $[-.04, .01]$, indicating a non-significant indirect path. However, the indirect effect for negative affect was $.02$ ($SE = .01$), and the 95% confidence interval did not include zero, 95% CI $[.005, .04]$, indicating a significant indirect path.

Discussion

In Study 2, work overload on a weekday predicted exhaustion and negative affect at work that day, even when controlling for baseline levels of all three variables.

Weekday negative affect at work predicted weekday hostility and withdrawal at home, even when the two measures were separated in time, and even when controlling for baseline levels of all variables. Weekday exhaustion at work did not predict weekday

hostility or withdrawal at home, with or without controlling for baseline levels of the variables. In consequence there was a significant indirect effect for negative affect but not one for exhaustion. Due to the nature of the methodology, our results strongly suggest that it is negative affect at work, not exhaustion, which leads to negative home interactions. Therefore, if negative affect, and not exhaustion, is the primary linking mechanism in strain-based WHC, then this suggests that variables that ameliorate negative affect would be better buffers of WHC than variables that ameliorate exhaustion. Study 3 was designed to test this hypothesis.

STUDY 3

The purpose of Study 3 was to test the hypothesis that variables that ameliorate negative affect would be better at reducing WHC than variables that ameliorate exhaustion. In this study we asked participants to report on their strain states both at work and at home, in order to examine variables that might weaken the links between domains. We examined rest as a moderating variable that might alleviate exhaustion, and positive affect as a moderating variable that might alleviate negative affect.

The first kind of moderator variable we examined was having the opportunity to rest, either at work or at home. We examined this variable because we believed that resting was an experience that may give exhausted individuals a chance to reenergize before interacting with their family. Recent research has found that when employees are able to recover at work, they are less exhausted after work (Demerouti, Bakker, Sonnentag, & Fullagar, 2012) because they feel they are able to restore their energy resources (Binnewies, Sonnentag, & Mojza, 2009). As well, rest and recovery at home predicted increased vigor at the end of the workday (Sonnentag & Niessen, 2008). Therefore, rest at work or at home may moderately reduce the association between work overload and home behaviors. The literature is limited in its empirical evidence of rest as a reducer of negative affect, yet one study found that recovery training predicted decreased negative affect at a later time (Hahn, Binnewies, Sonnentag, & Mojza, 2011). Therefore, it seems possible that rest may moderately reduce WHC.

Although research shows that rest and recovery is beneficial to workers experiencing WHC, it may not be the most beneficial moderator because our results suggest that negative affect is the more powerful linking mechanism. Rest allows

individuals to recover from exhaustion, but not necessarily negative emotions. If negative affect is the stronger linking mechanism in WHC, then variables that would reduce negative emotions would be most effective as moderators. We examined positive emotions experienced either at work or at home as another possible moderator variable. We decided to investigate positive emotions because these emotions may serve as a protective barrier against the negative emotions experienced at work, and may help prevent individuals from enacting hostile and withdrawn behaviors at home. Research shows that positive emotions undo the effects of negative emotions, such as rapid heart rate (Fredrickson & Levenson, 1998; Fredrickson, Mancuso, Branigan, & Tugade, 2000), and reduce depressive symptoms (Fredrickson, Tugade, Waugh, & Larkin, 2003). The present study will examine these moderators on the WHC process.

In Study 3, participants completed a questionnaire in the evening of a weekday between 8:30 pm and 12am, similar to Study 1. They answered questions regarding their personality, their work overload that day, their strain states at work, their strain states at home, and their hostility and withdrawal at home that evening. Participants also answered questions regarding their positive emotions experienced at work that day, their rest opportunities experienced at work that day, and their positive emotions and rest opportunities experienced at home that evening. Participants answered all of the items in chronological order; work questions first, then home questions. Our analyses examined the moderating effect that positive emotions and rest opportunities have on the links between negative work experiences and negative home experiences.

Method

Participants. Participants were 222 (50% male) individuals who were recruited, over the course of 1 week, for this online study using Mechanical Turk. Based on the eligibility requirements, participants completed the survey if they were full-time working adults (working 30 hours or more per week). Participants were only included in the analyses if they worked more than 30 hours per week, between 7 and 9 hours of work that day, and had spent less than 8 hours at home that evening prior to taking the survey. One hundred and eight participants did not meet these requirements and were excluded from the analyses, leaving 114 participants. Participants were 23 years of age or older, and in exclusive, heterosexual, cohabitating romantic relationships. Participants were a community sample, ranging in age from 23-61 years ($M = 34.13$, $SD = 9.26$). In regards to ethnicity, 76.3% were White, 7.9% were Black, 6.1% were Asian, 7.9% were Hispanic, and 1.8% were Alaskan/Native American. Average length of the romantic relationship was 8.68 years ($SD = 7.91$), while average length of cohabitation was 7.35 years ($SD = 8.24$). Median income was \$43,000 ($M = 49,845$, $SD = 26,030$). Thus, the sample was primarily white, middle class individuals.

Procedure. Participants were only allowed to complete the survey between the hours of 8:30 pm and 12 am, in order to assess their retrospective reports of their workday and their home interactions that evening. First participants completed a variety of background measures, including the control variable, trait neuroticism. Participants next completed a variety of questions regarding their current workday, as well as their current evening at home. In regards to the present study, results examined the constructs of work overload, negative affect and exhaustion at work and at home, restful activity at

work and home, positive emotions at work and home, and hostility and withdrawal at home.

Measures. Work overload was assessed with the same measure as Studies 1 and 2 ($\alpha = .91$). Exhaustion at work was assessed with the same measure as Studies 1 and 2 ($\alpha = .93$), and exhaustion at home ($\alpha = .93$) was assessed with the same measure but adapted for home. Hostility at home ($\alpha = .93$) and withdrawal at home ($\alpha = .90$) were assessed with the same measures as Studies 1 and 2. The following measures were new to Study 3.

Neuroticism. Distinct from the measure used to assess personality in Study 1 (BFAS; DeYoung et al., 2007), personality was assessed in Study 3 with the Big Five Inventory (BFI; John & Srivastava, 1999). This 44-item inventory assesses an individual's personality traits. An example neuroticism item is, "I see myself as someone who... Is depressed, blue." Participants responded using a 5-point scale ranging from 1 "strongly disagree" to 5 "strongly agree." Items were reverse-scored and averaged such that higher scores indicate higher levels of neuroticism ($\alpha = .85$).

Negative affect (at work and at home). Study 3 assessed negative affect with the Positive and Negative Affect Scale (PANAS; Watson et al., 1988). The PANAS is a more commonly used measure of negative affect in the WHC literature. The scale contains 10 negative emotion items. Example items include, "I felt irritable; afraid; hostile." The work version of the PANAS assessed the emotions at work, "Today, I felt ... at work" whereas the home version assessed the emotions at home, "Tonight, I felt ... at home." Participants responded using a 5-point scale ranging from 1 "very

slightly or not at all” to 5 “extremely.” (work PANAS, $\alpha = .92$; home PANAS; $\alpha = .94$). All items are listed in Appendix F.

Rest (at work and at home). Rest was assessed with 3 items, adapted from the Recovery Experience Questionnaire (REQ; Sonnentag & Fritz, 2007). An example item is, “Today at work... Tonight at home... I had time to rest and recuperate.” Participants responded on a 5-point scale ranging from 1 “never or very rarely” to 5 “very often or always.” Items were averaged such that higher scores indicated higher levels of rest (work Rest, $\alpha = .88$; home Rest, $\alpha = .96$). All items are listed in Appendix G.

Positive affect (at work and at home). Positive affect was assessed with the Differential Emotions Scale (Fredrickson et al., 2003). While a high score on the PANAS denotes high energy (Gaudreau, Sanchez, & Blondin, 2006), a high score on the DES denotes high positive emotions. Therefore, we examined positive affect with a scale that would directly assess the feeling of positive emotions. The scale contains 12 positive emotion items. One item regarding feeling sexual at work was removed because it may signal infidelity at work. Eleven items remained. Each item is presented with three synonyms. An example item is, “Today I felt amused, fun-loving, silly at work.” At home, all 12 items were examined. Participants responded on a 5-point scale ranging from 0 “not at all” to 4 “extremely.” Items were averaged such that higher scores indicated higher levels of positive emotions (work DES, $\alpha = .93$; home DES, $\alpha = .93$). All items are listed in Appendix H.

Results

Descriptive statistics and correlations. Table IX contains the descriptive statistics for the study variables, including means, standard deviations, and skew. As in

Studies 1 and 2, there was significant positive skew for negative affect (both at work and at home), and for hostility and withdrawal. Thus these variables were log-transformed.

Table IX
Descriptive Statistics of Study 3 Variables

Variables	Mean (SD)	Skew (SE)
Trait Neuroticism (1-5)	2.53 (0.78)	.16 (0.23)
Work		
Work Overload (1-5)	2.92 (1.06)	.15 (0.23)
Exhaustion at Work (1-5)	2.30 (1.02)	.64 (0.23)
Negative Affect at Work (1-5)	1.47 (0.68)	1.89 (0.23)
Rest at Work (1-5)	2.69 (0.90)	.46 (0.23)
Positive Affect at Work (0-4)	2.72 (0.86)	.21 (0.23)
Home		
Exhaustion at Home (1-5)	2.40 (1.09)	.62 (0.23)
Negative Affect at Home (1-5)	1.30 (0.58)	2.51 (0.30)
Rest at Home (1-5)	3.55 (0.99)	-.41 (0.23)
Positive Affect at Home (0-4)	3.13 (0.89)	-.04 (0.23)
Hostility at Home (1-5)	1.48 (0.84)	2.14 (0.23)
Withdrawal at Home (1-5)	1.68 (0.94)	1.60 (0.23)

Note. Range of the scale is in parentheses.

Table X, lower diagonal, contains the Pearson correlations for the Study 3 variables. Note that work overload was positively associated with hostility and withdrawal at home, as found in earlier studies, but that neither association was significant in this study. Also note that in this study work overload was positively significantly associated with exhaustion at work but only marginally associated with negative affect at work. Table X, upper diagonal, contains the partial correlations of Study 3 variables, controlling for trait neuroticism.

Modeling WHC. We wanted to first test the indirect effects of negative affect and exhaustion in the association between work demands and home behaviors (see Figure 4, Table XI).

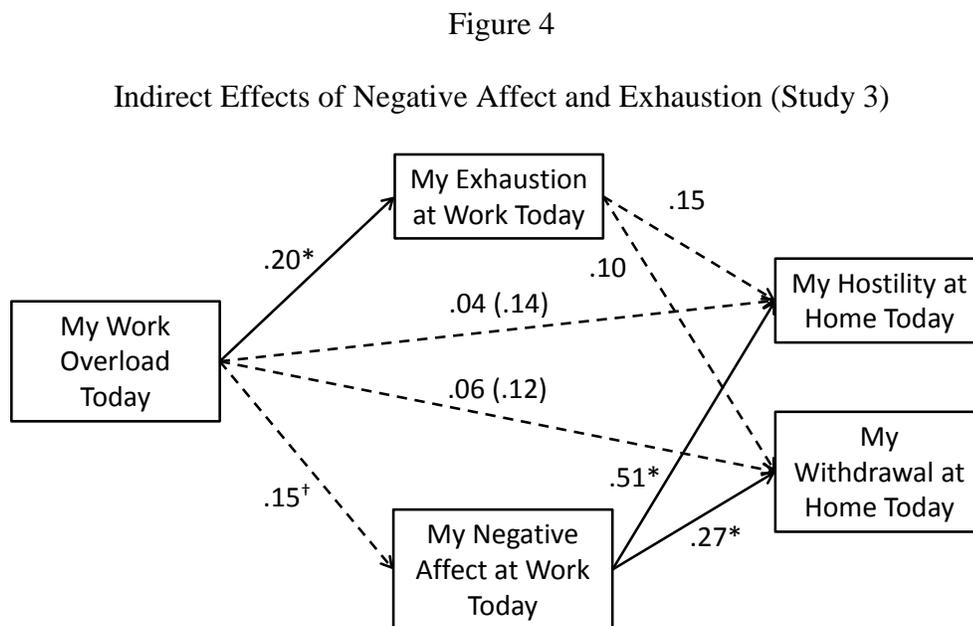


Figure 4. A diagram of the Study 3 regression analyses simultaneously testing negative affect and exhaustion as mechanisms of the within-day association between work overload and home behaviors. The control variable trait neuroticism is not shown in the figure, but was included in the analyses.

Table X
Correlations of Study 3 Variables

Variables	1	2	3	4	5	6	7	8	9	10	11
1. Work Overload	-	.14	.37*	-.27*	-.05	.10	.19	-.12	-.01	.18	.11
2. Negative Affect at Work (log)	.17 [†]	-	.45*	-.07	.14	.71*	.21 [†]	.01	-.13	.54*	.28*
3. Exhaustion at Work	.21*	.54*	-	-.21 [†]	-.17	.33*	.30*	-.18	-.21	.42*	.38*
4. Rest at Work	-.30*	-.08	-.13	-	.40*	-.09	-.32*	.14	.22 [†]	.001	-.05
5. Positive Affect at Work	.04	-.06	-.39*	.28*	-	.17	-.08	.33*	.50*	.18	.11
6. Negative Affect at Home (log)	.10	.71*	.36*	-.08	.10	-	.34*	-.19	-.26*	.73*	.51*
7. Exhaustion at Home	.25*	.36*	.48*	-.25*	-.14	.37*	-	-.22 [†]	-.47*	.28*	.50*
8. Rest at Home	-.08	-.11	-.27*	.10	.31*	-.21	-.24*	-	.60*	-.32*	-.23 [†]
9. Positive Affect at Home	-.004	-.20*	-.28*	.15	.51*	-.30*	-.44*	.50*	-	-.24 [†]	-.36*
10. Hostility at Home (log)	.15	.55*	.39*	-.02	.16 [†]	.73*	.42*	-.29*	-.22*	-	.62*
11. Withdrawal at Home (log)	.13	.39*	.30*	-.07	.13	.53*	.52*	-.18 [†]	-.33*	.68*	-
12. Trait Neuroticism	.03	.50*	.41*	.06	-.21*	.19	.33*	-.16 [†]	-.22*	.23*	.29*

Note. Below diagonal are Pearson correlations of study variables. Above diagonal are partial correlations controlling for trait neuroticism. * $p < .05$; [†] $p < .1$

Table XI
One Day's Exhaustion and Negative Affect

Predictor	Negative Affect at Work	Exhaustion at Work	Hostility at Home	Withdrawal at Home
Model 1				
Trait Neuroticism ^a	.49*	.40*	.22*	.28*
Work Overload	.15 [†]	.20*	.14	.12
Model 2				
Trait Neuroticism ^a			-.08	.11
Work Overload			.04	.06
Exhaustion at Work			.15	.10
Negative Affect at Work			.51*	.27*
<i>N</i>	113	113	113	113

Note. ^aControl variable. All numbers represent Betas. * $p < .05$, [†] $p < .1$

In regards to hostility at home, the bootstrapping test of the indirect effect for exhaustion was .005 ($SE = .006$), and the 95% confidence interval included zero, 95% CI [-.001, .03], indicating a non-significant indirect path. The indirect effect for negative affect was .01 ($SE = .01$), and the 95% confidence interval did not include zero, 95% CI [.002, .03], indicating a significant indirect path. In regards to withdrawal at home, the bootstrapping test of the indirect effect for exhaustion was .004 ($SE = .01$), and the 95% confidence interval included zero, 95% CI [-.003, .03], indicating a non-significant indirect path. The indirect effect for negative affect was .01 ($SE = .005$), and the 95% confidence interval did not include zero, 95% CI [.001, .02], indicating a significant indirect path. These results replicated our findings from Studies 1 and 2, showing that the indirect effect for negative affect was significant in the association between work demands and home behaviors, but the indirect path for exhaustion was not.

Distinct from Studies 1 and 2, the present study examined psychological states not only at work but also at home. This allowed us to explore how the states persisted across domains from work to home and how the home states were associated with home behaviors. We performed a series of regressions to examine the paths from work demands to strain at work, from strain at work to strain at home, and from strain at home to home behaviors (see Figure 5). Note that the size of the effect from negative affect at work to negative affect at home was almost twice that of the link between work and home for exhaustion. Also note that exhaustion at home did significantly predict one home behavior, withdrawal. Although exhaustion at work did not predict home behaviors in any of the three studies, exhaustion as a state does have the capacity to affect home behaviors. However, the size of the path for exhaustion is not strong enough to predict home behaviors from the previous domain.

Moderators of work overload. In the following General Linear Model analyses, we examined the association between work overload and home experiences (home states and home behaviors), as moderated by rest and positive affect (see Table XII). Predictor and outcome variables were z-scored prior to analysis, to allow easier interpretation of main effect and interaction effect coefficients.

Rest at work and positive affect at work. As seen in Table XII Model 2a, rest at work showed no significant main effects on home behaviors. Rest at work also did not significantly moderate the effect of work overload on home behaviors. Rest at work

Figure 5

Indirect Effects of Negative Affect and Exhaustion from Work to Home (Study 3)

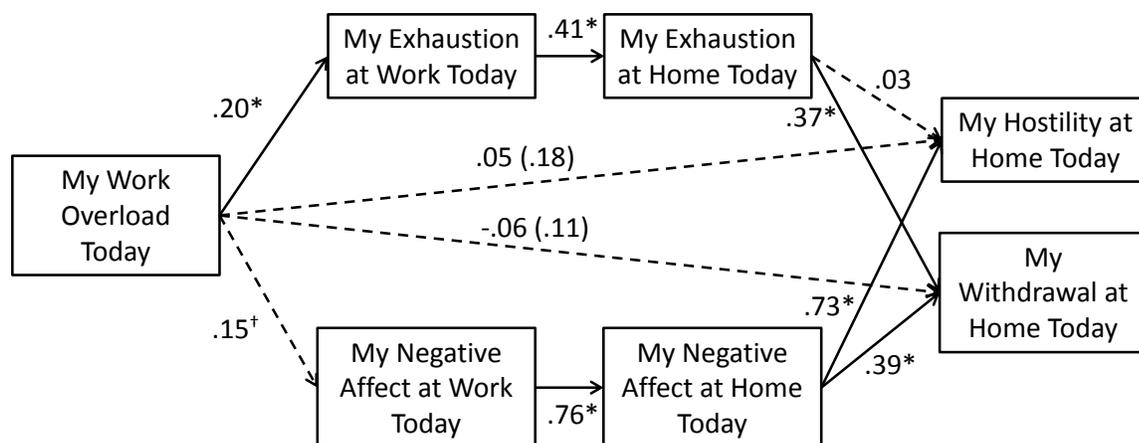


Figure 5. A diagram of the Study 3 regression analyses testing negative affect and exhaustion from work to home as simultaneous mechanisms of the within-day association between work overload and home behaviors. The control variable trait neuroticism is not shown in the figure, but was included in the analyses.

showed a significant main effect on one of the two home states, being associated with significantly reduced exhaustion at home, $\beta = -.20$, $F(1, 107) = 4.22$, $p = .04$. Rest at work did not significantly moderate the effect of workload on home states.

Positive affect at work showed significant main effects on both home behaviors, whereby positive affect at work was associated with *increased* hostility, $\beta = .24$, $F(1, 107) = 5.71$, $p = .02$, and withdrawal, $\beta = .23$, $F(1, 107) = 5.68$, $p = .02$. Positive affect at work did not significantly moderate the effect of workload on home states or behaviors.

Rest at home and positive affect at home. As seen in Model 2b of Table XII, rest at home showed a significant main effect on one home behavior, whereby rest at home was associated with significantly reduced hostility at home, $\beta = -.23$, $F(1, 106) = 4.83$, $p = .03$. Rest at home did not significantly moderate the effect of workload on home states or behaviors. Positive affect at home had a significant main effect on one home state and

one home behavior, whereby it was associated with reduced exhaustion at home, $\beta = -.36$, $F(1, 106) = 14.49$, $p < .001$, and reduced withdrawal at home, $\beta = -.24$, $F(1, 106) = 5.69$, $p = .02$. Positive affect at home did not significantly moderate the effect of workload on home states or behaviors.

Table XII
Moderators of Work Overload

Predictor	Negative Affect at Home	Exhaustion at Home	Hostility at Home	Withdrawal at Home
Model 1				
Trait Neuroticism ^a	.19	.32*	.22*	.28*
Work Overload	.10	.24*	.14	.12
Model 2a: Examining Work Moderators				
Trait Neuroticism ^a	.29*	.33*	.29*	.33*
Work Overload	.07	.18*	.11	.08
Positive Affect at Work	.22	-.03	.24*	.23*
Positive Affect at Work × Work Overload	-.12	-.03	.08	-.10
Rest at Work	-.13	-.20*	-.10	-.10
Rest at Work × Work Overload	.10	.04	.04	-.03
Model 2b: Examining Home Moderators				
Trait Neuroticism ^a	.14	.25*	.18 [†]	.24*
Work Overload	.11	.24*	.13	.14
Positive Affect at Home	-.21	-.36*	-.06	-.24*
Positive Affect at Work × Work Overload	.03	-.06	.05	-.08
Rest at Home	-.06	.01	-.23*	.00
Rest at Work × Work Overload	-.13	-.10	-.10	-.13
<i>N</i>	64	113	113	113

Note. ^aControl variable. All variables were z-scored prior to analysis in the General Linear Model and thus represent standardized coefficients. * $p < .05$; [†] $p < .01$

Moderators of negative affect and exhaustion at work. We next examined the association of negative affect and exhaustion at work on home behaviors and home states, as moderated by rest and positive affect (see Table XIII).

Rest at work and positive affect at work. As seen in Model 2a of Table XIII, rest at work had a significant main effect on one home state, whereby rest at work was associated with reduced exhaustion at home, $\beta = -.24$, $F(1, 104) = 7.31$, $p = .008$. There was also one interaction between rest at work and a work state on hostility at home, whereby rest at work significantly reduced the association between exhaustion at work and hostility at home, $\beta = -.17$, $F(1, 104) = 4.64$, $p = .03$. When individuals experienced more exhaustion at work, they experienced more hostility at home, but this effect was less severe when individuals experienced high rest at work, $\beta = .30$, $t(104) = 2.54$, $p = .01$, than for those who experienced low rest at work, $\beta = .50$, $t(104) = 4.20$, $p < .001$ (see Figure 6). There were no other interactions with rest at work on home states or behaviors.

Interaction of Exhaustion at Work and Rest at Work

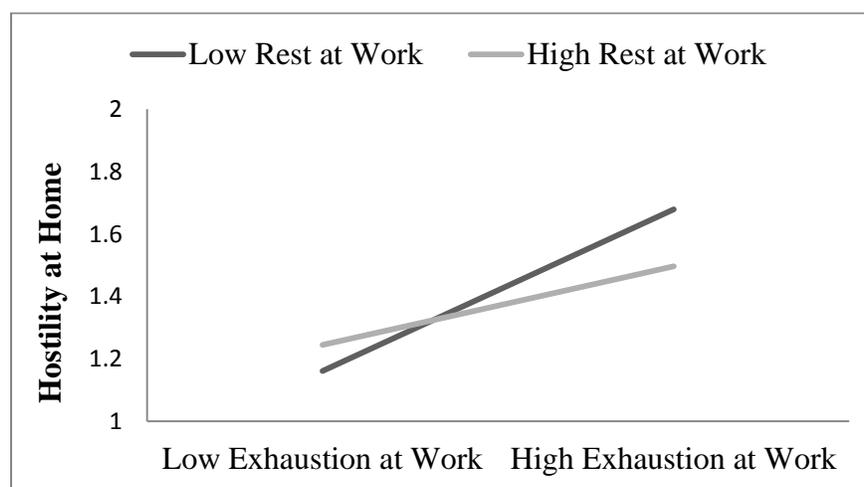


Figure 6. Hostility at home according to exhaustion at work for low and high rest experienced at work.

There were significant main effects of positive affect at work on both home behaviors whereby positive affect at work was associated with increased hostility at home, $\beta = .28$, $F(1, 104) = 11.61$, $p = .001$, and increased withdrawal at home, $\beta = .29$, $F(1, 104) = 8.84$, $p = .004$. There were also interactions between positive affect at work and work states on both a home state and a home behavior. Positive affect at work increased the association between negative affect at work and negative affect at home, $\beta = .46$, $F(1, 54) = 9.21$, $p = .004$. When individuals experienced more negative affect at work, they experienced more negative affect at home, and this effect was more severe when individuals experienced high positive affect at work, $\beta = 1.21$, $t(104) = 6.49$, $p < .001$, than for those who experienced low positive at work, $\beta = .30$, $t(104) = 1.50$, $p = .14$ (see Figure 7). As well, positive affect at work increased the association between exhaustion at work and hostility at home, $\beta = .22$, $F(1, 104) = 7.83$, $p = .006$. When individuals experienced more exhaustion at work, they experienced more hostility at home, and this effect was more severe when individuals experienced high positive affect at work, $\beta = .55$, $t(104) = 3.93$, $p < .001$, than for those who experienced low positive affect at work, $\beta = .11$, $t(104) = 1.07$, $p = .29$ (see Figure 8).

Rest at home and positive affect at home. As seen in Model 2b of Table XIII, rest at home had a significant main effect on one home behavior whereby rest at home was associated with reduced hostility at home, $\beta = -.21$, $F(1, 103) = 5.97$, $p = .02$. As well, rest at home had interactions with work states on exhaustion at home whereby rest at home decreased the association between exhaustion at work and exhaustion at home, $\beta = -.20$, $F(1, 103) = 4.96$, $p = .03$. When individuals experienced more exhaustion at work, they experienced more exhaustion at home, but this effect was less severe when

Table XIII

Moderators of Negative Affect and Exhaustion at Work

Predictor	Negative Affect at Home	Exhaustion at Home	Hostility at Home	Withdrawal at Home
Model 1				
Trait Neuroticism ^a	-.12	.12	-.09	.10
Negative Affect at Work	.84*	.10	.51*	.28*
Exhaustion at Work	.02	.37*	.16	.12
Model 2a: Work Moderators				
Trait Neuroticism ^a	-.17	.17 [†]	-.03	.17 [†]
Negative Affect at Work	.75*	.07	.40*	.17
Exhaustion at Work	-.02	.35*	.33*	.26*
Positive Affect at Work	.15	.11	.28*	.29*
Positive Affect at Work × Negative Affect at Work	.46*	.16	.09	.06
Positive Affect at Work × Exhaustion at Work	.02	-.08	.22*	.13
Rest at Work	-.07	-.24*	-.03	-.11
Rest at Work × Negative Affect at Work	-.02	.02	.17	.11
Rest at Work × Exhaustion at Work	.02	-.08	-.17*	-.09
Model 2b: Home Moderators				
Trait Neuroticism ^a	-.20	.06	-.10	.09
Negative Affect at Work	.80*	.17 [†]	.61*	.39*
Exhaustion at Work	.12	.27*	.01	-.06
Positive Affect at Home	.02	-.32*	-.05	-.30*
Positive Affect at Home × Negative Affect at Work	.12	.05	.35*	.38*
Positive Affect at Home × Exhaustion at Work	.33*	.05	-.14	-.16
Rest at Home	-.24 [†]	.02	-.21*	.01
Rest at Home × Negative Affect at Work	-.15	.32*	-.04	.07
Rest at Home × Exhaustion at Work	-.28 [†]	-.20*	.02	-.14
<i>N</i>	64	114	114	114

Note. ^aControl variable. All variables were z-scored prior to analysis in the General Linear Model and thus represent standardized coefficients. * $p < .05$;

[†] $p < .01$

Interaction of Negative Affect at Work and Positive Affect at Work

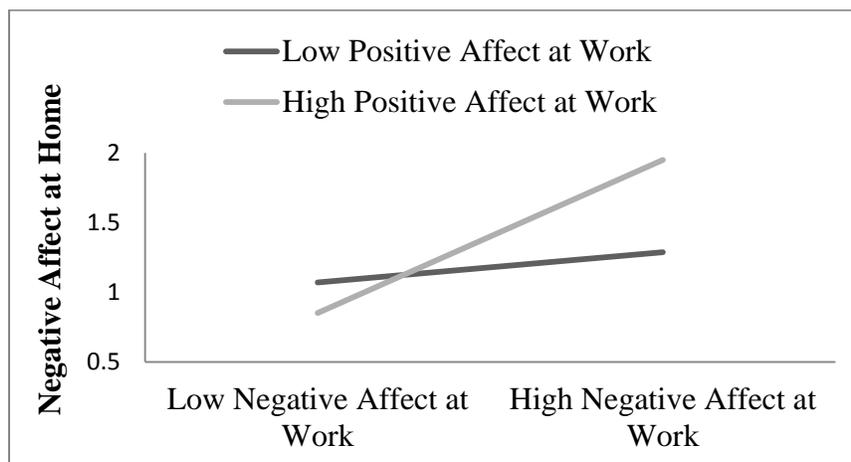


Figure 7. Negative affect at home according to negative affect at work for low and high positive affect experienced at work.

Interaction of Exhaustion at Work and Positive Affect at Work

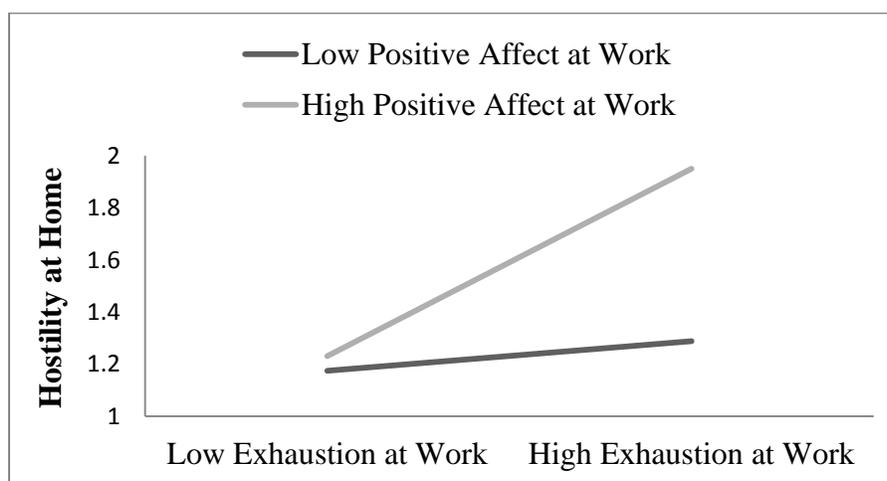


Figure 8. Hostility at home according to exhaustion at work for low and high positive affect experienced at work.

individuals experienced high rest at home, $\beta = .08$, $t(104) = .55$, $p = .59$, than for those who experienced low rest at home, $\beta = .47$, $t(104) = 3.42$, $p = .001$ (see Figure 9). As well, rest at home increased the association between negative affect at work and exhaustion at home, $\beta = .32$, $F(1, 103) = 11.13$, $p = .001$. When individuals experienced high negative affect at work, they experienced more exhaustion at home, and this effect

was more severe when individuals experienced high rest at home, $\beta = .49$, $t(104) = 3.21$, $p = .002$, while experiencing low rest at home reduced the effect of negative affect at work on exhaustion at home, $\beta = -.15$, $t(104) = -.12$, $p = .22$ (see Figure 10).

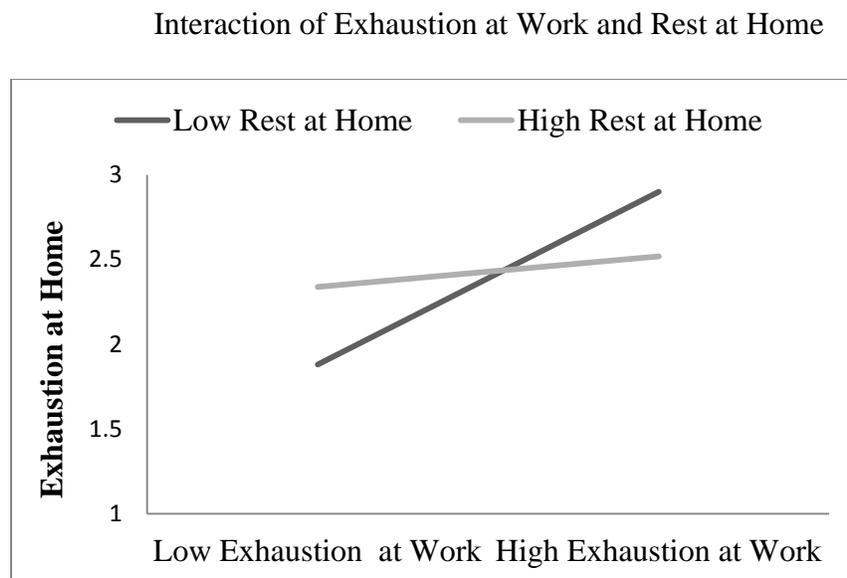


Figure 9. Exhaustion at home according to exhaustion at work for low and high rest experienced at home.

Positive affect at home had a significant main effect on one home state and one home behavior whereby positive affect at home was associated with reduced exhaustion at home, $\beta = -.32$, $F(1, 103) = 13.05$, $p < .001$, and reduced withdrawal at home, $\beta = -.30$, $F(1, 103) = 9.76$, $p = .002$. There were also interactions with positive affect at home and work states on both home states and behaviors, whereby positive affect at home increased the association between exhaustion at work and negative affect at home, $\beta = .33$, $F(1, 54)$

Interaction of Negative Affect at Work and Rest at Home

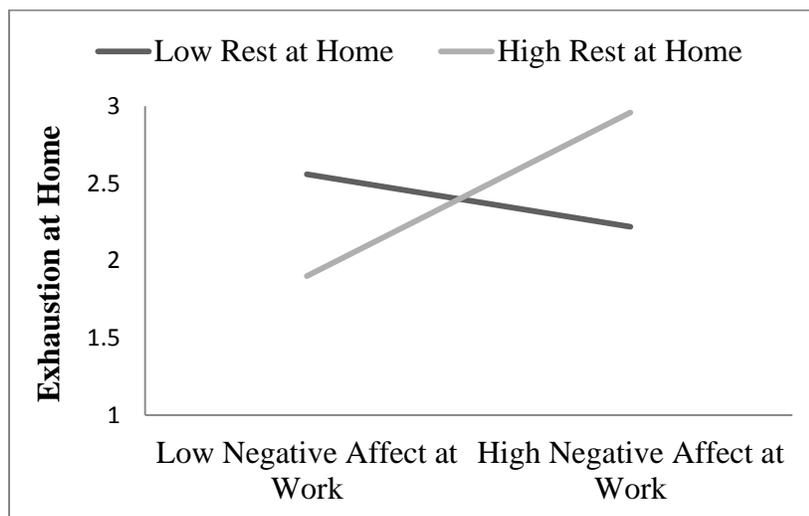


Figure 10. Exhaustion at home according to negative affect at work for low and high rest experienced at home.

= 6.59, $p = .01$. When individuals experienced high exhaustion at work, they experienced more negative affect at home, and this effect was more severe when individuals experienced high positive affect at home, $\beta = .45$, $t(104) = 1.92$, $p = .06$, while experiencing low positive affect at home reduced the effect of exhaustion at work on negative affect at home, $\beta = -.21$, $t(104) = -1.73$, $p = .09$ (see Figure 11). As well, positive affect at home increased the association between negative affect at work and home behaviors. Positive affect at home increased the association between negative affect at work and hostility at home, $\beta = .35$, $F(1, 103) = 16.43$, $p < .001$. When individuals experienced more negative affect at work, they experienced more hostility at home, and this effect was more severe when individuals experienced high positive affect at home, $\beta = .96$, $t(104) = 6.71$, $p < .001$, than for those who experienced low positive affect at home, $\beta = .26$, $t(104) = 2.21$, $p = .03$ (see Figure 12).

Interaction of Exhaustion at Work and Positive Affect at Home

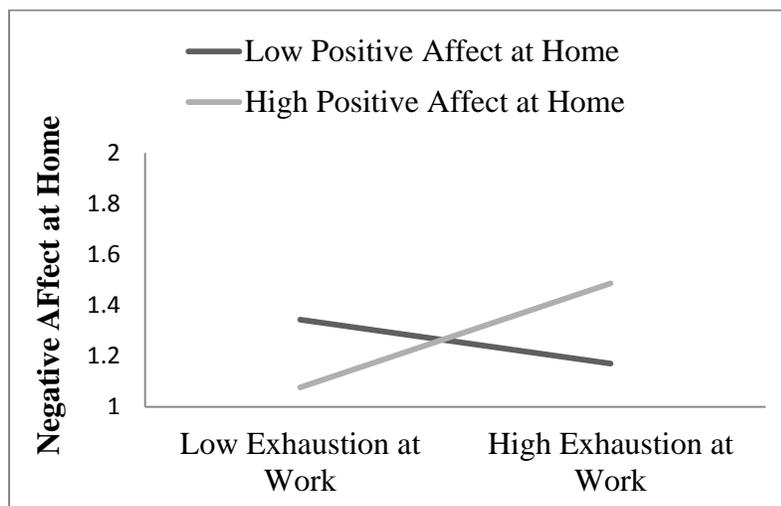


Figure 11. Negative Affect at home according to exhaustion at work for low and high positive affect experienced at home.

Finally, positive affect at home increased the association between negative affect at work and withdrawal at home, $\beta = .38$, $F(1, 103) = 15.78$, $p < .001$. When individuals experienced high negative affect at work, they experienced more withdrawal at home, and this effect was more severe when individuals experienced high positive affect at home, $\beta = .77$, $t(104) = 4.88$, $p < .001$, while experiencing low positive affect at home did not affect the association of negative affect at work on withdrawal at home, $\beta = .01$, $t(104) = .07$, $p = .94$ (see Figure 13). These unexpected results were examined further in later exploratory analyses.

Interaction of Negative Affect at Work and Positive Affect at Home

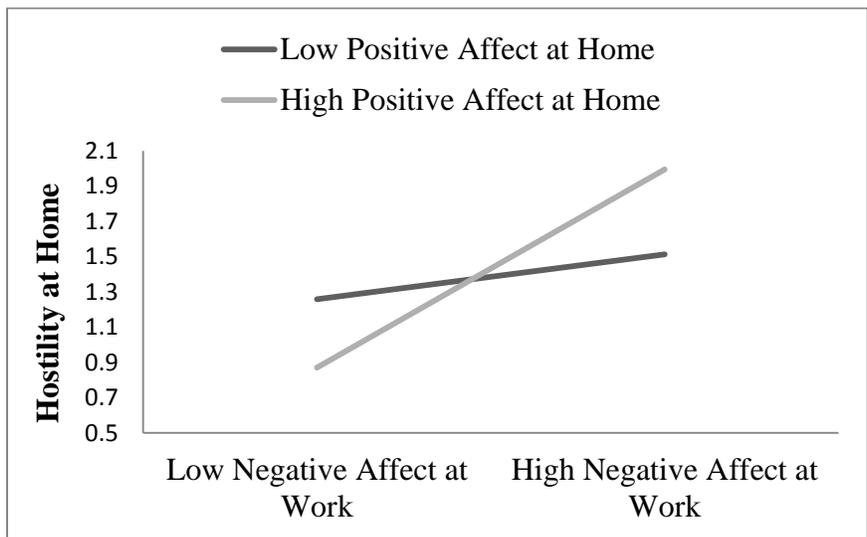


Figure 12. Hostility at home according to negative affect at work for low and high positive affect experienced at home.

Interaction of Negative Affect at Work and Positive Affect at Home

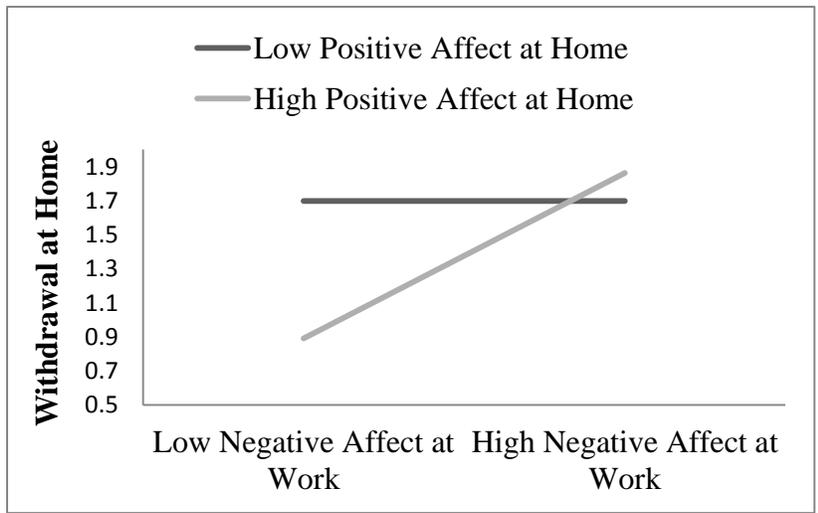


Figure 13. Withdrawal at home according to negative affect at work for low and high positive affect experienced at home.

Discussion

Study 3 further replicated the indirect effect of negative affect at work, but not exhaustion at work, from work demands to home behaviors. In this study, we were able to examine the persistence of strain from work to home. Study 3 found that negative affect at work predicted negative affect at home, showing that negative affect is persistent from the work to home domain. Exhaustion also showed a similar trend, in that exhaustion at work predicted exhaustion at home. It is important to notice that the effect size for negative affect from work to home was twice that of exhaustion from work to home, which suggests that although individuals may experience both states at home due to work, negative affect comes home even more than exhaustion does. This may explain why the indirect effect for negative affect is stronger than the indirect effect for exhaustion in all three studies.

In regards to the moderators, it seemed that rest was a better moderator than positive affect in ameliorating WHC. Rest at work seemed to be helpful by reducing exhaustion at home, as well as the association between exhaustion at work and hostility at home. Rest at home, on the other hand, made individuals slightly less angry, and thus less hostile. Although rest at work and at home affected hostility by way of different states, rest only affected decreased hostility, not withdrawal. This suggests that resting gives individuals time to cool down, increase their energy and reduce their negative emotions before interacting with their partner.

The most interesting, and unexpected, effect found in Study 3 was the effect that positive affect had on home states and behaviors. We predicted that positive affect would be a better moderator than rest in reducing negative home states and behaviors, but

positive affect at work in particular had the opposite effect. Positive affect at work was associated with increased negative behaviors at home. Positive affect from work seemed to make individuals experience increased exhaustion, which affected home behaviors. Notably, positive affect at home was good for individuals to experience, but only if they did not experience any negative affect or exhaustion at work that day. Positive affect at home, when experienced in absence of any other negativity, predicted decreased exhaustion, and thus decreased withdrawal. However, when positive affect at home was experienced in conjunction with negative affect and exhaustion at work, individuals experienced even more hostility and withdrawal at home.

Further explorations of positive affect at work. The main effect of positive affect at work leading to increased hostility and withdrawal at home was unexpected. We explored possible variables that may explain why experiencing positive emotions at work may influence individuals to be even more hostile and withdrawn toward their partner, and why positive emotions at home, when experienced in combination with a negative workday, would contribute to more negative home behaviors. We examined a number of possibilities. The first was increased confidence at work. We speculated that possibly the reason why positive affect at work lead to increased negative home behaviors was that individuals were experiencing positive affect along with increased confidence (i.e., pride) at work. We examined a moderated mediation with the Differential Emotions Scale item, “I felt proud, confident, self-assured at work.” It is possible that this pride would allow individuals to feel more confident and thus more willing to aggress against their partners by way of negative home behaviors. However, this hypothesis did not explain the effect of positive affect. We also examined energy as an explanation for the

positive affect finding. Research has found that positive emotions restore depleted individuals (Tice, Baumeister, Shmueli, & Muraven, 2007), and if individuals are experiencing positive affect at work, then maybe this gives them the energy to be hostile toward their partner. We examined a measure of energy that we assessed at work with items such as, “Today I felt active and energetic at work.” However, this hypothesis also did not explain the positive affect effect.

We next examined a number of personality variables in order to determine if positive affect functioned the same way for individuals with different personalities. We speculated that individuals who were more agreeable or extraverted would be less likely to have their positive affect at work influence their home behaviors. However, again these variables did not explain the positive affect effect. Finally, we speculated that relationship satisfaction may also be an important variable, in that the finding may have been driven by individuals in poor romantic relationships only. Unfortunately, this variable was not assessed in Study 3. Future research should examine the role of relationship satisfaction in the connection between positive affect at work and negative home behaviors.

Finally, we speculated that this effect could be a Type I error. Therefore, we examined the role of positive affect in other datasets we had available. The negative effect of positive affect at work on home behaviors was pervasive throughout all of our data.

Additional buffers for negative affect at work. We do not believe that the failure of positive affect to act as a buffer in the association between negative affect at work and negative affect at home suggests that negative affect does not play as large a

role as we previously believed. It suggests that we have not yet found the proper moderator to reduce the spillover of negative affect into the home. We believe that an effective buffer of negative affect would still be a better moderator than resting. In the present study, we did not find an appropriate moderator of negative affect, and thus did not have a proper test against rest as an alternate moderator.

Therefore, we speculated as to what possible variables could buffer the association between negative affect at work and negative affect at home. We examined a number of variables that we had in the present dataset, including reappraisal at work, (e.g., today at work I had time to put my day into perspective) and distraction at work (e.g., today at work, I had time to distract myself from things going on at home). Neither of these variables buffered the negative affect process. We also examined reappraisal at home (e.g., tonight at home, I had time to put my day into perspective) and distraction at home (e.g., tonight at home, I had time to distract myself from things going on at work). Although reappraisal at home did not prevent negative affect persisting from work to home, distraction at home did. Even when individuals experienced a day with high negative affect, distracting themselves from work-related thoughts while at home prevented the spillover of negative affect from the work domain to the home domain. In order to have greater confidence in these results, we would need to replicate this finding in a new dataset. Future research should examine other variables that may prevent negative affect and exhaustion at work from affecting home behaviors.

GENERAL DISCUSSION

The present studies sought to examine the relative contribution of exhaustion and negative affect in the association between work demands and home behaviors. Previous research has suggested that both of these linking mechanisms are important (Bakker et al., 2004; Greenhaus & Beutell, 1985; Spector et al., 1988; Voydanoff, 2005), however, no existing study has tested both mechanisms simultaneously, as these studies have done. Although in all three studies we found that work overload predicted exhaustion and negative affect at work, only negative affect explained the association between work overload and the home behaviors, hostility and withdrawal. Studies 1, 2 and 3 showed that the association between exhaustion at work and home behaviors was weaker than the association between negative affect at work and home behaviors. Even when controls were introduced, such as baseline levels of negative affect in Study 2, the association between negative affect at work and home behaviors was still strong. As well, even when the work questions and home questions were separated by time, negative affect still contributed more to WHC. Therefore, we contend that the daily influence of negative affect at work on home behaviors was stronger than the daily influence of exhaustion at work.

In Study 3, we examined the full process of WHC: work overload to strain at work, to strain at home, to home behaviors. Even though exhaustion at home did predict withdrawal at home, the size of the indirect effect for negative affect at work to negative affect at home was much larger than that of exhaustion at work to exhaustion at home. These results strongly suggest that although exhaustion may occur at work due to feeling

overloaded at work, negative affect may be the key process that predicts negative home behaviors.

Negative Affect

Negative affect strongly persisted from work to home in every study, and increased reports of hostility and withdrawal at home. Although the literature abounds with empirical evidence suggesting that negative affect is an important mechanism in increased WHC (Allen et al., 2012; Michel & Clark, 2009; van Emmerik & Jawahar, 2006), increased marital conflict (Schulz et al., 2004; Verhofstadt, Buysse, De Clercq, & Goodwin, 2005), and increased negative affect at home (Ilies et al., 2009; Song et al., 2008; Williams & Alliger, 1994), these findings did not examine both negative affect and exhaustion simultaneously, as this study has done. Our findings suggest that negative affect is a stronger mechanism, even when controlling for exhaustion. We contend that negative emotions are not tiring, as exhaustion did not contribute variance to home behaviors above and beyond negative affect alone. Thus our findings suggest that the WHC literature needs to increase their theoretical understanding of negative affect, as it seems to be a very important linking mechanism of WHC.

It is important to consider whether it is possible that our findings regarding the role of negative affect are due to some limitations of our studies. Our use of work overload as our sole measure of work demands may have influenced our results. Although work overload has been used extensively in the WHC literature, and predicts both exhaustion (Leiter & Durup, 1996) and negative affect at work (Story & Repetti, 2006), it may have the limitation of being too similarly related to something in excess, like our measures of negative affect. It is important to note that we found a larger effect

size of work overload to exhaustion at work than to negative affect at work in every study. Therefore, this limitation did not seem to have effects in our data.

Exhaustion

The fact that exhaustion at work was not a stronger linking mechanism in WHC suggests that exhaustion at work may not be as important a mechanism as the WHC literature proposes. Although many of the seminal theory papers in the field use exhaustion at work as the primary explanation for WHC (Demerouti et al., 2001; Hobfoll, 1989; ten Brummelhuis & Bakker, 2012), there has yet to be a study that examined both mechanisms simultaneously, as this one has done. Therefore, we speculate that if exhaustion at work is having an effect on WHC, it is likely doing so through its association with negative affect. It is important to note that although exhaustion from work did not affect home behaviors, exhaustion at home was still an important construct. This suggests that there is more to learn about the role of exhaustion at home than is currently known.

It may be useful for the WHC field to differentiate between perceived exhaustion and actual exhaustion. It is possible that we did not accurately capture the role of exhaustion due to this limitation. As previously mentioned, it is possible that perceived exhaustion is not an accurate predictor of actual exhaustion, and does not represent an actual loss of resources (Clarkson et al., 2010). Previous research has determined that perceived exhaustion is an important predictor within the work domain (Bakker et al., 2004; Ernst Kossek & Ozeki, 1998), and also for personal outcomes outside of work (Peterson et al., 2008). Yet, we determined that perceived exhaustion was not a stronger mechanism for interpersonal home behaviors than negative affect. It is still possible that

actual exhaustion is a strong mechanism in WHC. To more accurately examine exhaustion, future studies should measure individuals' actual loss of energy resources, such as with behavioral measures of exhaustion. As well, the present study only measured two home outcomes, both of which were interpersonal variables. It may be the case that participants were exhausted at work, and would have exhibited personal "drain-like" outcomes at home, rather than interpersonal outcomes. Previous research has found that exhaustion predicted arousal at home (Roberts & Levenson, 2001), as well as depression (Peterson et al., 2008). Therefore, future studies should examine negative affect and exhaustion simultaneously with these limitations in mind.

Moderators of WHC

Study 3 found that rest was an important moderator of WHC. Although it was not exceptionally powerful, it was successful in reducing some instances of WHC, including the association between exhaustion at work and hostility at home. However, it was not successful in consistently reducing all instances of WHC. Rest did not reduce any association between work overload and home states or behaviors. Rest also did not reduce any associations between negative affect at work and home states or behaviors. Therefore, it was not the best moderator for reducing negative affect-based WHC. It is important to note that the literature has shown that rest at home is beneficial for reducing WHC, because individuals are less exhausted and have more energy (Binnewies et al., 2009; Demerouti et al., 2012; Sonnentag & Niessen, 2008), yet there are very few studies that examine rest at work as a beneficial experience. Our study suggests that more research is needed to examine the role of rest at work in reducing the effects of WHC.

The unexpected finding that positive affect at work increased the association between strain and negative home behaviors was surprising based off of the current literature. Research shows that positive affect reduces the effects of negative affect on heart rate and is beneficial (Fredrickson et al., 2000; Fredrickson & Levenson, 1998). We were surprised by our findings and thus attempted to find a reasonable explanation for the role that positive affect played in WHC, including pride, energy, and personality variables. None explained this unanticipated finding. Future research is needed in order to further investigate the role that positive affect contributes in WHC.

Unfortunately, neither rest nor positive affect consistently buffered against WHC. Future research should examine other potential variables that may more successfully prevent or decrease the deleterious effects of negative affect-based WHC. It is possible that distraction at home could operate as an appropriate buffer, but more research is needed to further understand what role distraction, or other buffering variables, could contribute to the WHC process.

Conclusion

Our results suggest that individuals who experience negative emotions at work are more likely to enact negative behaviors toward their partners. It seems that this work-based negative affect more strongly contributes to home behaviors than experiencing exhaustion from work. As this was the first study to simultaneously investigate the role that negative affect and exhaustion at work play in WHC, we suggest that more empirical evidence and theory is needed to further investigate the importance of negative affect on home states and behaviors. As well, more research is needed to further investigate what variables, if any, can stop the deleterious negative affect pathway.

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Appendix A

Work Overload

#	Item	Anchor 1	Anchor 2	Anchor 3	Anchor 4	Anchor 5
1	I had too much work to do today at my job.	1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
2	I had an excessive amount of work to do today at my job.	1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
3	I had too much to do and not enough time to do it today at work.	1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
4	I had enough time to do what I needed to do today at work.*	1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree

*Reverse Scored

Appendix B

Exhaustion

#	Item	Anchor 1	Anchor 2	Anchor 3	Anchor 4	Anchor 5
1	I felt more and more used up today at work.	1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
2	I felt burned out today at work.	1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
3	I felt drained and exhausted today at work.	1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
4	Today at work, I felt too tired to deal with things.	1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree

Appendix C

Negative Affect

#	Item	Anchor 1	Anchor 2	Anchor 3	Anchor 4	Anchor 5	Anchor 6	Anchor 7
1	I felt fear at work today.	1 Never	2	3	4	5	6	7 Always
2	I felt worry at work today.	1 Never	2	3	4	5	6	7 Always
3	I felt anxiety at work today.	1 Never	2	3	4	5	6	7 Always
4	I felt nervous at work today.	1 Never	2	3	4	5	6	7 Always
5	I felt anger at work today.	1 Never	2	3	4	5	6	7 Always
6	I felt irritation at work today.	1 Never	2	3	4	5	6	7 Always
7	I felt disgust at work today.	1 Never	2	3	4	5	6	7 Always
8	I felt rage at work today.	1 Never	2	3	4	5	6	7 Always
9	I felt shame at work today.	1 Never	2	3	4	5	6	7 Always
10	I felt guilt at work today.	1 Never	2	3	4	5	6	7 Always
11	I felt regret at work today.	1 Never	2	3	4	5	6	7 Always
12	I felt embarrassment at work today.	1 Never	2	3	4	5	6	7 Always
13	I felt sadness at work today.	1 Never	2	3	4	5	6	7 Always
14	I felt loneliness at work today.	1 Never	2	3	4	5	6	7 Always
15	I felt unhappiness at work today.	1 Never	2	3	4	5	6	7 Always
16	I felt depression at work today.	1 Never	2	3	4	5	6	7 Always

Appendix D

Hostility

#	Item	Anchor 1	Anchor 2	Anchor 3	Anchor 4	Anchor 5
1	Tonight at home, I said something unkind to my partner.	1 Never	2 Almost Never	3 Sometimes	4 Fairly Often	5 Very Often
2	Tonight at home, I started an argument with my partner.	1 Never	2 Almost Never	3 Sometimes	4 Fairly Often	5 Very Often
3	Tonight at home, I yelled at my partner.	1 Never	2 Almost Never	3 Sometimes	4 Fairly Often	5 Very Often
4	Tonight at home, I interrupted my partner.	1 Never	2 Almost Never	3 Sometimes	4 Fairly Often	5 Very Often
5	Tonight at home, I criticized my partner.	1 Never	2 Almost Never	3 Sometimes	4 Fairly Often	5 Very Often
6	Tonight at home, I was sarcastic to my partner.	1 Never	2 Almost Never	3 Sometimes	4 Fairly Often	5 Very Often
7	Tonight at home, I commanded my partner to do something.	1 Never	2 Almost Never	3 Sometimes	4 Fairly Often	5 Very Often
8	Tonight at home, I complained about something my partner did.	1 Never	2 Almost Never	3 Sometimes	4 Fairly Often	5 Very Often

Appendix E

Withdrawal

#	Item	Anchor 1	Anchor 2	Anchor 3	Anchor 4	Anchor 5
1	Tonight at home, I wanted to be left alone.	1 Never	2 Almost Never	3 Sometimes	4 Fairly Often	5 Very Often
2	Tonight at home, I didn't feel like interacting with my partner.	1 Never	2 Almost Never	3 Sometimes	4 Fairly Often	5 Very Often
3	Tonight at home, I kept to myself when my partner probably would have preferred some attention.	1 Never	2 Almost Never	3 Sometimes	4 Fairly Often	5 Very Often
4	Tonight at home, I didn't want to talk about my problems with my partner.	1 Never	2 Almost Never	3 Sometimes	4 Fairly Often	5 Very Often
5	Tonight at home, I ignored my partner when he/she asked for some attention.	1 Never	2 Almost Never	3 Sometimes	4 Fairly Often	5 Very Often
6	Tonight at home, I did not pay attention when my partner was talking about something that interests him/her.	1 Never	2 Almost Never	3 Sometimes	4 Fairly Often	5 Very Often
7	Tonight at home, I refused to listen to my partner's feelings.	1 Never	2 Almost Never	3 Sometimes	4 Fairly Often	5 Very Often
8	Tonight at home, I refused to talk about a problem that we share.	1 Never	2 Almost Never	3 Sometimes	4 Fairly Often	5 Very Often

Appendix F

Negative Affect

#	Item	Anchor 1	Anchor 2	Anchor 3	Anchor 4	Anchor 5
1	I felt distressed.	1 Very Slightly or Not at all	2 A Little	3 Moderately	4 Quite a Bit	5 Extremely
2	I felt upset.	1 Very Slightly or Not at all	2 A Little	3 Moderately	4 Quite a Bit	5 Extremely
3	I felt guilty.	1 Very Slightly or Not at all	2 A Little	3 Moderately	4 Quite a Bit	5 Extremely
4	I felt scared.	1 Very Slightly or Not at all	2 A Little	3 Moderately	4 Quite a Bit	5 Extremely
5	I felt hostile.	1 Very Slightly or Not at all	2 A Little	3 Moderately	4 Quite a Bit	5 Extremely
6	I felt irritable.	1 Very Slightly or Not at all	2 A Little	3 Moderately	4 Quite a Bit	5 Extremely
7	I felt ashamed.	1 Very Slightly or Not at all	2 A Little	3 Moderately	4 Quite a Bit	5 Extremely
8	I felt nervous.	1 Very Slightly or Not at all	2 A Little	3 Moderately	4 Quite a Bit	5 Extremely
9	I felt jittery.	1 Very Slightly or Not at all	2 A Little	3 Moderately	4 Quite a Bit	5 Extremely
10	I felt afraid.	1 Very Slightly or Not at all	2 A Little	3 Moderately	4 Quite a Bit	5 Extremely

Appendix G

Rest

#	Item	Anchor 1	Anchor 2	Anchor 3	Anchor 4	Anchor 5
1	I had time to rest and recuperate.	1 Never or Very Rarely	2 Rarely	3 Occasionally	4 Often	5 Very Often or Always
2	I had time to take a break.	1 Never or Very Rarely	2 Rarely	3 Occasionally	4 Often	5 Very Often or Always
3	I had time to sit back and relax.	1 Never or Very Rarely	2 Rarely	3 Occasionally	4 Often	5 Very Often or Always

Appendix H
Positive Affect

#	Item	Anchor 1	Anchor 2	Anchor 3	Anchor 4	Anchor 5
1	I felt amused, fun-loving, silly.	0 Not at All	1 A Little Bit	2 Moderately	3 Quite a Bit	4 Extremely
2	I felt awe, wonder, amazement.	0 Not at All	1 A Little Bit	2 Moderately	3 Quite a Bit	4 Extremely
3	I felt content, serene, peaceful.	0 Not at All	1 A Little Bit	2 Moderately	3 Quite a Bit	4 Extremely
4	I felt glad, happy, joyful.	0 Not at All	1 A Little Bit	2 Moderately	3 Quite a Bit	4 Extremely
5	I felt grateful, appreciative, thankful.	0 Not at All	1 A Little Bit	2 Moderately	3 Quite a Bit	4 Extremely
6	I felt hopeful, optimistic, encouraged.	0 Not at All	1 A Little Bit	2 Moderately	3 Quite a Bit	4 Extremely
7	I felt interested, alert, curious.	0 Not at All	1 A Little Bit	2 Moderately	3 Quite a Bit	4 Extremely
8	I felt love, closeness, trust.	0 Not at All	1 A Little Bit	2 Moderately	3 Quite a Bit	4 Extremely
9	I felt proud, confident, self-assured.	0 Not at All	1 A Little Bit	2 Moderately	3 Quite a Bit	4 Extremely
10	I felt sexual, desiring, flirtatious.*	0 Not at All	1 A Little Bit	2 Moderately	3 Quite a Bit	4 Extremely
11	I felt surprised, amazed, astonished.	0 Not at All	1 A Little Bit	2 Moderately	3 Quite a Bit	4 Extremely
12	I felt sympathy, concern, compassion.	0 Not at All	1 A Little Bit	2 Moderately	3 Quite a Bit	4 Extremely

*Item was not assessed at work.

CURRICULUM VITAE

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Education

- Aug 2012-Present M.A., Wake Forest University, Winston-Salem, NC.
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- May 2011 B.A., Psychology (with Honors), Summa cum Laude, North
Carolina State University, Raleigh, NC

Publications

Petrocelli, J. V., Kammrath, L. K., Brinton, J. E., Uy, M. R., & Cowens, D. L. (under review). Holding on to what might have been may loosen (or tighten) the ties that bind us: A counterfactual potency analysis of previous dating alternatives.

Poster Presentations

Petrocelli, J. V., Kammrath, L. K., & Brinton, J. E. (2014, February). *"If only I had dated Audrey": A counterfactual potency analysis of dating relationships*. Poster presented at the 15th annual meeting of the Society for Personality and Social Psychology, Austin, TX.

Brinton, J. E., & Kammrath, L. K. (2014, February). *Taking it home with you: Negative affect versus exhaustion as mediators of work-home conflict*. Poster presented at the 15th annual meeting of the Society for Personality and Social Psychology, Austin, TX.

Brinton, J. E., & Kammrath, L. K. (2013, May). *Breaking down work spillover: Emotions versus fatigue as mediators of work-home spillover*. Poster presented at the 25th annual convention for the Association for Psychological Science, Washington, DC.

Brinton, J. E., Leary, K. A., & Halberstadt, A. G. (2013, January). *Ethnic and gender differences and similarities in the socialization of children's pride*. Poster presented at the 14th annual meeting of the Society for Personality and Social Psychology, New Orleans, LA.

Feldman, J. E. (2012, January). *Individual choices regarding commitment with a romantic partner*. Poster presented at the 13th annual meeting of the Society for Personality and Social Psychology, San Diego, CA.

Feldman, J. E. (2011, July). *Individual choices regarding commitment with a romantic partner*. Presented at the 2011 6th International Conference on Interdisciplinary Social Sciences, New Orleans, LA.

Talks

Brinton, J. E. (2013, October). Taking strain home with you every day: Two studies and a proposal. Presented at the Seminar for Self-Regulation Department Brownbag, Winston-Salem, NC.

Brinton, J. E. (2013, May). Taking it home with you: The process of work to home spillover and its mediators. In K. Laurin & D. R. Kille (Chairs), *The social side of self-regulation: The interface between goals and interpersonal relationships*. Symposium conducted at the 25th Annual Association for Psychological Science, Washington, DC.

Brinton, J. E. (2013, May). *Taking it home with you: The process of work to home spillover and its mediators*. Presented at the annual First-Year Presentations to Wake Forest Psychology Department, Winston-Salem, NC.

Brinton, J. E. (2013, February). Taking it home with you: The process of work-to-home spillover and its mediators. Presented at the annual First-Year Presentations to Wake Forest Psychology Department, Winston-Salem, NC.

Teaching Experience

Jan 2014- May 2014 Teaching assistantship full time. Undergraduate Social Psychology and Research Methods in Developmental Psychology

Aug 2013- Dec 2013 Teaching assistantship part time for undergraduate Social Psychology and undergraduate Research Methods in Development Psychology. Assisted with in-class lectures, met with students in office hours for individual instruction and graded exams and term papers.

Research Experience

Aug 2012-Present Second-Year Graduate Student studying under Dr. Lara Kamrath

June 2013-Jan 2014 Research Assistant for the Posttraumatic Growth Study, as part of the John Templeton Foundation Grant # 24322: "What Are the Real Benefits of Hardship? Examining Possibilities for Behavioral Growth Following Adversity." Dr. Eranda Jayawickreme as PI.

- May 2011-Aug 2012 Children's Understanding of Emotion in Dyadic Interactions (CUED-IN) Grant Coordinator for PI's Drs. Amy Halberstadt and Patricia Garrett-Peters. Recruited, organized, and scheduled research assistants, families and teachers for data collection for the Cued-In grant. Also participated in data collection
- May 2011-May 2012 Research Assistant at the Duke Interdisciplinary Initiative in Social Psychology (DIISP) Lab for Dr. Meredith Terry
- Jan 2010-May 2011 Undergraduate Research Assistant, North Carolina State University, Family Affect Beliefs and Behaviors Lab (FABB)
Advisor: Dr. Amy Halberstadt
Assisted Dr. Halberstadt, and doctoral candidates with data collection, literature searches, and grant writing
- Jan 2010-May 2011 Undergraduate Honors Thesis: Individual choices regarding commitment with a romantic partner, North Carolina State University
Advisor: Dr. Rupert Nacoste
Collaborated with Dr. Nacoste to research long-term relationships, conducted focus groups, collected data, and wrote thesis
- May-July 2009 Research Assistant at innovation, Research & Training, Inc.
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Assisted Dr. Parker with data collection, data entry and grant writing

Work Experience

- June 2013-Present Research Assistant for the Posttraumatic Growth Study, as part of the John Templeton Foundation Grant # 24322: "What Are the Real Benefits of Hardship? Examining Possibilities for Behavioral Growth Following Adversity." Eranda Jayawickreme as PI.
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Honors

May 2011 NCSU	Senior Outstanding Research Award, Department of Psychology,
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