COMMUNITY, WORK & FAMILY
https://doi.org/10.1080/13668803.2024.2333872

Routledge
Taylor & Francis Group

What happens at home stays at home: the Vegas rule for work depends on working memory

Oscar Ybarra[a] and Todd Chan[b]

[a]Gies College of Business, Champaign, IL, USA; [b]University of Michigan, Ann Arbor, MI, USA

ABSTRACT

Family problems, although separate from the work sphere, can impact one's experience of work even when away from home. We propose that challenges arising from the home and family domain affect individuals' experience of work because they act as distractions. If so, working memory, an ability relevant to managing distractions, should attenuate the effects that one's family problems have on experienced job demands. Using a nationally representative dataset ($N = 2591$) with both concrete measures of family problems and cognitive performance measures, we show that family problems predict experiencing one's job as more demanding and stressful. However, increasing working memory ability attenuates this relationship. Results suggest that although family problems impinge on one's work, increased working memory ability to manage distractions may reduce their consequences. We connect our findings and their implications to relevant theoretical frameworks that inform the linkage between family and work.

ARTICLE HISTORY
Received 10 April 2023
Accepted 18 March 2024

KEYWORDS
family-work linkage; job demands; cognition; working memory; resources

Kim Littlefield, an executive who helps clients with career management issues, was quoted in Forbes advising individuals on the importance of compartmentalizing personal issues from one's work. She stated 'Make a commitment, that while you are at work, you will focus solely on work. Put your personal issues 'in a box' on a 'mental shelf'. Tell yourself you will deal with them at another time'. She went on to say, 'Sometimes, whether the personal issues are positive or negative, we allow ourselves to become absorbed in them while work that needs to be done continues to pile up, resulting in added stress' (Dresdale, 2016).

Personal issues can take several forms, but a constant source is one's family and home life. Whether it is being responsive to a spouse or one's parents, caring for children, offering support to other family members, or simply keeping up with cleaning and putting a meal together, family life creates its own demands and responsibilities that may never be fully tamed. The best many of us can hope for is to keep thoughts of family and home life at bay and out of mind so that we can focus on our work for a few hours. The Vegas rule applied to work – what happens at home stays at home – has benefits. Not being able to abide by it, by letting thoughts and concerns about

CONTACT Oscar Ybarra oybarra@illinois.edu Gies College of Business, 1206 South 6th. Street, Champaign, Illinois 61820, USA

home life become active while at work, represent distractions that affect performance and flourishing at work (cf. Du et al., 2018).

Although a simplification, much of human behavior is founded on the core building blocks of motivation and ability. The quote above by the executive coach seems to focus on motivation: abiding by the Vegas rule and compartmentalizing one domain of life from another is a matter of will and intent, and one has to make a commitment to focus and not allow oneself to become affected by personal issues. But ability may be just as, if not more, important. Some individuals may just be better able to keep family and life issues from affecting their work. If so, what is it that these individuals possess that others do not? One possibility, which we examine in this research, is better working memory.

Working memory at work

What is working memory? First, *memory* refers to the ability to store, recall, and update representations of information in the mind (Mandler, 1967). However, *working memory* refers to being able to simultaneously retrieve, hold, and manipulate information in memory (Baddeley, 1992). To illustrate, although being read a phone number and being asked to repeat it only involves storing this information in simple short-term memory, being asked to repeat the phone number in reverse order would involve working memory, or the ability to store *and* manipulate this information at the same time (Engle, 2002). On assessments of working memory, individuals may be presented with a series of digits, one at a time. They are asked to repeat the series, but in reverse order. Individuals with higher working memory ability are able to complete this task accurately with longer series of numbers (Engle, 2002). Beyond simple digit memory, however, this ability to regulate one's attention towards stimuli is tightly intertwined with how well individuals maintain their concentration and work effectively amidst distractions. Working memory is needed to represent goals and monitor work tasks in the mind, and maintain attention on relevant thoughts in the midst of irrelevant distractions (Hofmann et al., 2012). To illustrate, when intrusive thoughts enter the mind, working memory is needed to keep track of the thoughts that one *should* remain focused on. Thus, working memory is required to ensure that if distractions intrude, individuals can maintain focus amidst those distractions.

Unsurprisingly, individuals with higher working memory are better at managing multiple task demands amidst distractions, suggesting that they have more cognitive resources available during attention-taxing situations (Redick, 2016). Again, however, 'distractions' are not necessarily physical ones, but are often psychological or emotional ones that require effective self-regulation (Du et al., 2018). Working memory drives this self-regulation (Hofmann et al., 2012). For example, individuals with poorer working memory ability (or individuals with temporarily taxed or exhausted working memory) are less likely to follow through with their plans to improve their health (e.g. by eating more fruits and vegetables) and are less effective at exerting self-control in the face of inappropriate temptations because they have difficulty with concentrating on their goals in the face of the various distractions in life that interfere (Hall et al., 2008; Hofmann et al., 2008). When negative situations arise, working memory also facilitates how well individuals manage their emotions (e.g. suppressing negative emotions and

replacing them with positive ones when it would be socially appropriate) (Hofmann et al., 2012; Pushkar et al., 2000; Schmeichel & Demaree, 2010). Likewise, in the workplace, working memory should be a capacity that is applied for various purposes, including planning, decision-making, innovation, and negotiation (Chan et al., 2021). For example, when negotiating, individuals need to be able to keep in mind information relevant to the negotiation, consider the other party's alternatives, strategies, and possible objections, and dynamically adjust their demands and arguments as the interaction unfolds.

In terms of the present focus, working memory should also be involved in individuals being able to regulate the reactions towards negative family stresses that may be inappropriate for the workplace. For example, individuals may be upset at an interaction that previously occurred at home, but those with higher working memory should be better able to regulate or replace the negative emotions while continuing to focus on their work role.

Distinguishing working memory from other constructs

The discussion of working memory may recall other concepts such as self-regulation and mindfulness, so it's important to distinguish them. Self-regulation is usually thought to be comprised of three main elements. These are: (a) endorsed standards for how one thinks, feels, and behaves; (b) requisite motivation to reduce discrepancies between current behavior (or thoughts, feelings) and standards; and (c) the capacity to reduce such discrepancies (Baumeister & Heatherton, 1996; Carver & Scheier, 1998). Thus, poor performance on a task can result from (a) a lack of standards or not being able to monitor them for possible discrepancies, (b) lack of motivation to attend to discrepancies even if noticed, or (c) lack of capacity to remove the discrepancy even if motivation is present. Working memory is a cognitive ability that allows individuals to maintain goals and standards in memory and to compare current performance with those standards. In addition, it's the capacity that allows one to reduce discrepancies once noticed, such as altering one's emotional state to fit with personal standards. Thus, successful self-regulation depends on and would not be possible without working memory (Hofmann et al., 2012).

Regarding mindfulness, a review by Sutcliffe et al. (2016) discusses several features that different definitions of mindfulness have in common. For example, mindfulness is considered a state of mind in which an individual focuses on what is going on in the present moment (Brown & Ryan, 2003), whether externally or internally to them (e.g. their own thoughts) (Ruedy & Schweitzer, 2010). Mindfulness tends to involve observation, and by some accounts actively making distinctions among what is being observed (Langer, 2014). Mindfulness is not performance based; many self-report instruments have been developed to assess it as a state of mind (for a review see Bergomi et al., 2013), such as asking study participants how mindful they thought they were while engaging in a task. Some instruments attempt to assess it as a trait or recurring pattern of mental state across individuals (e.g. Brown & Ryan, 2003). Again, working memory is a cognitive ability. Nevertheless, it's possible that mindfulness-related interventions could be used to try to improve individuals' working memory, as we consider in the discussion.

In summary, working memory can be distinguished from self-regulation because it appears to be a critical ability for the process of self-regulation to occur. That is, a person could have standards for separating work and family, but still not be able to do

so because of low working memory levels. Mindfulness is a state of mind and potentially a disposition and not an ability as working memory is.

The family-work linkage

The above discussion on working memory assumes that thoughts, concerns, and reactions about one's family and home life can cross into one's work if not actively denied entry. To further situate the present research, as well as highlight its contributions, it's important to discuss different conceptions of the family-work linkage researchers have studied.

An extensive literature exists on the linkage between family and work and vice versa. As well, several conceptualizations describing these linking mechanisms exist. In their review, Edwards and Rothbard (2000) noted that much of this conceptual work is quite metaphorical, and they translated these conceptualizations into causal propositions about how home life and work should relate to each other. The different linkages they reviewed include spillover, congruence, compensation, resource drain, work-family conflict, and segmentation, noting that the different mechanisms have been referred to by several other names. In addition to discussing these, we will also review the work-home resources model (ten Brummelhuis & Bakker, 2012).

Briefly, *spillover* refers to how similarities in outcomes can result between the family and work domains in terms of mood, values, and skills applied in the two domains (e.g. Burke & Greenglass, 1987; Lambert, 1990; Near et al., 1980). For example, an individual in their work may have cultivated skills for understanding the interests of different parties when negotiating, and at home start displaying similar skills for understanding their spouse's concerns when resolving a dispute (experiences from one domain transferred whole to the other; Eckenrode & Gore, 1990; Near, 1984). Spillover need not be positive, though, as an individual's dissatisfaction with their work can influence family specific dissatisfaction (the experience from one domain affects a related but distinct construct; Judge & Watanabe, 1994; Payton-Miyazaki & Brayfield, 1976). *Congruence* shares a resemblance to spillover, in that similarities occur between family and work (e.g. values expressed at work and at home). However, the reason for this is due to a third variable, such as an individual's personality or behavioral style (Frone et al., 1994; Zedeck, 1992).

Compensation refers to the use of one domain (e.g. family) to counteract negative or disappointing experiences in the other domain (Burke & Greenglass, 1987; Champoux, 1978; Zedeck, 1992). This can occur by holding back effort or involvement in the less satisfying domain (Lambert, 1990; Staines, 1980), or by seeking more positive experiences in other domains (Kando & Summers, 1971; Zedeck, 1992). *Resource drain* also involves redistributing resources (time, attention, energy) among domains (Piotrkowski, 1979; Small & Riley, 1990). The emphasis here appears to be on the finite or 'fixed pie' aspect of these resources, and the resource transfer is likely unintentional compared to compensation. Also, resource drain has less to say about the search for alternative rewards or the distinct avenues (e.g. religious or community involvement) in which individuals seek to increase the satisfying aspects of their lives (Edwards & Rothbard, 2000).

Work-family conflict is an aversive experience and refers to the incompatibility in demands between the family and work domains (Burke & Greenglass, 1987; Greenhaus & Beutell, 1985). The demands can be a function of others' expectations or the individual's

own values concerning role requirements and obligations (Kahn & Quinn, 1970). Three different forms of work-family conflict have been discussed, time-based, strain-based, and behavior-based (Greenhaus & Beutell, 1985). Time-based conflict refers to how the time needed to meet demands in one domain are taken up by the other (Repetti, 1987; Staines, 1980); strain-based conflict means that fatigue, tension, and dissatisfaction from one domain create impairments in meeting demands in the other domain (Greenhaus & Beutell, 1985); and behavior-based conflict refers to a person's inability to shift or adjust behavior used in one domain to meet demands in the other (Eckenrode & Gore, 1990), such as continuing to use autocratic decision-making when discussing issues with a spouse. *Segmentation* refers to active efforts by individuals to create a separation or boundary between the domains of family and work to keep the events and reactions in one domain from affecting the other domain (Burke & Greenglass, 1987; Lambert, 1990; Piotrkowski, 1979; Zedeck, 1992).

Finally, a relatively newer conception dealing with family-work conflict introduces additional theoretical elements to further specify the causal processes that connect family and work (ten Brummelhuis & Bakker, 2012). This framework brings in Hobfoll's (1989, p. 2002) work on conservation of resources from the stress literature to suggest that the presence or absence of various contextual and personal resources can be used to explain both the presence of conflict between family and work, but also enrichment, in which positive experiences in one domain result in positive or growth experiences in the other (e.g. how learning effective negotiation behaviors at work, if transferred, could help with cultivating a more satisfying marriage). The addition of the resources perspective suggests additional, important questions such as what factors moderate the relationship between family and work in predicting outcomes.

Working memory and the family-work linkage

Of the perspectives between family and work discussed, four are most relevant to the present research. These are work-family conflict (or family-work conflict) (Burke & Greenglass, 1987; Greenhaus & Beutell, 1985), spillover (Burke & Greenglass, 1987; Lambert, 1990; Near et al., 1980), segmentation (Burke & Greenglass, 1987; Lambert, 1990; Piotrkowski, 1979; Zedeck, 1992), and work-home resources (ten Brummelhuis & Bakker, 2012). The different linkages between family and work need not be independent processes, but can co-occur, interact, or can be integrated to offer clearer and more nuanced views of the family-work interface (Edwards & Rothbard, 2000). For example, both strained-based, family-work conflict and spillover suggest that strain from one domain can negatively impact the work domain, although for the former the effect is likely amplified in that the strain is thought to impair meeting role-requirements in the other domain (Edwards & Rothbard, 2000). Segmentation is relevant in that it is a response to the incompatibility between family and work, as individuals actively attempt to create boundaries between the two spheres. The work-home resources perspective suggests that certain personal resources could play a role in determining whether an individual is or is not able to create this segmentation. We propose that working memory is such a resource.

As discussed, working memory is needed to maintain continued focus amidst distractions that have entered the mind and to regulate one's reactions to those distractions. An

individual with better working memory should be better able to keep distressing thoughts about home life (i.e. strained-based conflict) at bay by creating segmentation so that they do not impinge on their experiences while at work, for example, feeling overwhelmed and that they cannot keep up with their job.

The focus on working memory potentially allows the present research to make several contributions to research on the family-work linkage. First, although keeping family life from affecting one's work is something many individuals struggle with, no research has examined the question of the potential role of working memory. Some research has used self-reports of daily concentration and memory errors (Lapierre et al., 2012; Nohe et al., 2014), but no work to date has used cognitive performance measures to examine their role in predicting job demands in the face of experienced family problems, despite the fact that cognitive abilities represent what these reports of concentration and memory are referring to. Second, there is limited research that examines potential moderators of the family-work interface (see Edwards & Rothbard, 2000; Rothbard et al., 2021; ten Brummelhuis & Bakker, 2012). Here, working memory is positioned as a factor that moderates or helps to determine whether individuals are able to keep the spheres of family and work separate (to segment), with those with higher working memory ability posited to be more able at keeping the two domains separate. The focus on working memory also has implications for the work-home resources model. That model positions attention as a personal resource that is volatile or transient and not an enduring aspect of the person, a resource mainly for dealing with task demands (ten Brummelhuis & Bakker, 2012). However, working memory is a critical element in an individual's ability to manage their attention (Chan et al., 2021), and it is an enduring individual difference (Daneman & Carpenter, 1980; Unsworth & Engle, 2007). Thus, working memory operates more as a 'Key' personal resource. Key resources play a central role in how people manage other resources (Hobfoll, 1989, 2002; ten Brummelhuis & Bakker, 2012) such as attention. In addition, by allowing for the creation of psychological boundaries (segmentation), working memory may help prevent the depletion of other resources (e.g. emotional resources). In this way, the present perspective can also inform work on conservation of resources (Hobfoll, 1989, 2002).

Hypotheses

The outcome studied in this research is experienced job demands. All jobs have objective characteristics that are part of their design, but they are nevertheless subjectively experienced and interpreted by individuals. Research that has separately studied objective and subjectively reported job demands has shown that an individual's interpretation of job demands actually mediate the effects of objective characteristics. For example, objective requirements for positive emotional displays were related to employee exhaustion through perceived emotional demands (Li et al., 2023). A similar process should hold for general resources needed for one's work. Individuals require attention to deal with task demands (ten Brummelhuis & Bakker, 2012), but family problems can intrude on one's focus at work and create conflicting distractions (Allen et al., 2014; Lapierre et al., 2012). Distractions such as these are nevertheless cognitively demanding on individuals'

attention (Masicampo & Baumeister, 2011; Smit et al., 2016). Because attention is a limited resource, individuals distracted by family problems have less of it available for work tasks (Crouter, 1984; Voydanoff, 2004; also see Lavie, 2010), which should make them experience their work as more stressful and demanding. Thus:

> ***H1:*** In line with family-work conflict, family problems should create distractions that negatively affect attention, making individuals' experience of work seem more demanding due to a reduced sense of being able to execute their duties.

> ***H2:*** Because working memory helps manage attention amidst distractions, individuals with higher working memory should be able to manage their attention in a way that helps resist the intrusions of family life into work life, being better able to maintain focus on workplace tasks. This should support their perception that they are able to meet or continue to meet job demands.

In reviewing the family-work linkage earlier, we discussed the notion of resources as helpful for further delineating the processes connecting family and work (ten Brummelhuis & Bakker, 2012). In the context of that framework, we have proposed working memory as a general resource that helps moderate the influence of family problems on work experiences, as stated in Hypothesis 1. Staying with the theme of resources as potential moderators, other important resources for individuals are those available to them at their work by nature of their jobs and social relations with co-workers and supervisors. For example, having discretion in the skills one applies, voice in decision-making, or having collaborative colleagues can help reduce job demands and concomitant mental and physiological costs (e.g. Bakker & Demerouti, 2017; Karasek, 1979; Keene & Reynolds, 2005). Hence:

> ***H3:*** The greater availability of resources dealing with aspects of the job and the social-work environment (e.g. supportive relations with co-workers) should limit the effect that family problems have on experienced job demands.

It is possible that the role or working memory depends on the presence of work resources. For example, working memory may help individuals keep family problems from becoming distractions and affecting perceived job demands but only to the extent that individuals do not have high levels of work resources. That is, for individuals with decision latitude in their jobs and or the presence of supportive co-worker relations, job demands may not be particularly high, thus leaving little room for working memory to play a role despite the presence of family problems. Another possibility is that working memory may play a role in how individuals use their work resources. An individual with high working memory, who can better manage their attention, may be better able to not only keep family distractions at bay, but also use their decision latitude to organize tasks more efficiently, thus reducing job demands. Based on these distinct possibilities, we propose the more general hypothesis:

> ***H4:*** The moderating role of working memory between family problems and job demands will depend on the level of work resources.

To test these hypotheses, as well as determine the implications of our findings for these different theoretical conceptualizations, we examined a large, nationally representative data set containing work, family, and cognitive performance measures.

Methods

We examined data from the National Survey of Midlife Development in the United States (MIDUS II; 2004–2006). This nationally representative study aims to provide a comprehensive picture of the associations among demographic variables and the physical and psychological health of Americans. Participants completed various self-administered questionnaires assessing psychosocial outcomes at work and at home. As well, in a separate session, respondents completed a series of cognitive tasks over the telephone. Of interest to the present study is the working memory assessment. Thus, from these data, we were able to examine if and how working memory interacted with family and work variables.

Participants

Respondents were 5269 English-speaking adults (2316 male; 2647 female) between the ages of 28 and 84 ($M = 55.30$; $SD = 12.42$). Eighty-one percent of respondents completed the self-administered questionnaires, and eighty percent of respondents completed the cognitive tasks. Forty-nine percent of individuals were presently working ($n = 2591$). Within this group, 49.4% of respondents were male and 50.6% were female, between the ages of 30 and 82 ($M = 50.16$, $SD = 9.483$). 45.3% of respondents worked in a professional occupation. The median number of hours worked per week by participants was 42.28, 71.4% were married, and 85% had at least one child. Respondents had a median education level of an associate's degree (on a 12-point scale from 1 – no schooling to 12 – doctoral/professional degree). Respondents were 89% White, 5.4% Black or African American, 1.7% Native American, 0.7% Asian, 0.2% Pacific Islander, and 2.5% other.

Measures

Job demands

The outcome variable in the study was job demands, the aspects of the job (physical, social, organizational) that require sustained effort and for that reason can lead to physiological and psychological costs (Karasek, 1979). In an early study of job demands, Karasek and colleagues showed that job demands experienced at time 1 predicted negative cardiovascular symptoms in employees at time 2 (Karasek et al., 1981). Job demands was measured with a five-item scale ($\alpha = .73$), which assessed individuals' judgments of these negative aspects of their job. Individuals indicated the degree to which over the last year they found their work to be overly demanding, taxing, or overwhelming (e.g. 'How often did you have too many demands made on you?' and 'How often do you have to work very intensively, that is, you are very busy trying to get things done?'). This was done on five-point scales (1 'all of the time' to 5 'never'). Scales were reverse-scored and summed such that higher scores reflect higher job demands.

Family problems

This was one of the main predictors in the study. For this measure, participants indicated separately for their spouse/partner, children, and parents the number of problems these

individuals had experienced in the last 12 months. There were ten different types of problems participants considered for each relation. Examples include chronic disease or disability, financial or legal problems, or problems getting along with others. These questions were answered 'yes' (scored as 1) or 'no' (scored as 0), or they could have indicated that the problem did not apply. The mean number of problems reported was 2.16 ($sd = 2.89$), with a minimum being 0 and maximum being 29.

Working memory

This task was administered over the telephone at a time chosen by the participant. Participants were instructed not to use written aids. In rare instances, data were excluded for participants with hearing issues or who had difficulty understanding instructions. Participants were presented with a series of digits, one at a time, of increasing length (i.e. difficulty), and were asked to repeat them backwards. Digits were presented starting with two-digit strings, and they increased in length to a maximum of eight digits. Two chances (trials) were permitted for each digit length; the task was stopped when participants could not repeat the digits correctly on both trials (Tun & Lachman, 2006). Higher digit length recall is indicative of higher levels of verbal working memory. This task has shown convergent validity with in-person administration of an equivalent test (Lachman et al., 2014).

Work resources

The work resources measure was comprised of fifteen items that assessed supportive aspects of the job (e.g. How often does your job provide you with a variety of things that interest you) and supportive aspects of the work and organizational environment (e.g. How often do you get help and support from your coworkers?). The items were answered on 5-point scales that ran from 1 (all of the time) to 5 (never). The items were reversed-scored so that higher numbers represent the presence of a greater number of work resources (Cronbach's $\alpha = .83$).

Covariates

We took care to control for covariates that are related to family problems, working memory, and job demands. First, we controlled for individuals' age and highest level of education completed, given their associations with working memory performance (Van Hooren et al., 2007). Second, we controlled for individuals' gender, weekly hours worked for pay at main job and other jobs ($n = 2575$; $M = 42.28$; $SD = 13.94$), and total household income including wages, pension, and social security ($n = 2018$; $M = \$84{,}239.42$; $SD = \$58{,}391.22$), given their associations with the extent to which individuals judge that home and family experiences affect their work (Crouter, 1984; Keene & Reynolds, 2005; Stevens et al., 2007). Third, we controlled for general negative affect over the past thirty days,[1] as affective states can act as broader indices of stress, which can affect judgments of one's job and work environment and appraisals of one's current problems and challenges (Judge et al., 2000; Stoeva et al., 2002). Table 1 summarizes the zero-order correlations among all these variables of interest.

Table 1. Summary of bivariate correlations among continuous variables of interest and associated covariates.

	1	2	3	4	5	6	7	8	9
1. Working Memory									
2. Family Problems	.017								
3. Work Resources	.070**	−.024							
4. Job Demands	.018	.135**	.012						
5. Age	−.053*	.063**	−.115**	.045*					
6. Gender	.016	.12**	.021	−.017	.005				
7. Highest Level of Education	.192**	.008	.155**	.127**	.004	−.054**			
8. Total Household Income	.110**	−.027	.155**	.107**	−.006	−.117**	.323**		
9. Weekly Hours Worked	.021	−.019	.088**	.255**	−.007	−.301**	.067*	.169**	
10. Negative Affect	.008	.217**	−.150**	.202**	.01	.047*	−.033	−.051*	.001

* $p < .01$; ** $p < .01$.

Results

All predictors were mean-centered, then regressed on job demands. In presenting the results, we use a stepwise process to test each of the four hypotheses. Then, we provide additional tests of the focal hypothesis dealing with whether working memory attenuated the relationship between experienced family problems and job demands.

Table 2 describes the results of the regression examining whether family problems predicted experienced job demands. In support of *H1*, and consistent with family-work conflict and spillover, family problems predicted reported job demands. As people reported experiencing more family problems over the past twelve months, the more they experienced their job as demanding.

In the next regression model, we tested whether working memory moderated the effect of family problems on job demands, as well as whether work resources moderated the effect of family problems on job demands. As shown in Table 3, the results indicated that the interaction or working memory and family problems was significant in predicting job demands, but the interaction between work resources and family problems was not. These findings support ***H2*** but not ***H3***. The two-way interaction of working memory and family problems indicates that the relationship between family problems and job demands depended on working memory capacity. We will probe this interaction presently.

The final hypothesis, ***H4***, proposed that the moderating role of working memory (as tested in ***H2***) would depend on work resources level. As shown in Table 4, the interaction of the three predictors did not significantly predict experienced job demands. Thus, the

Table 2. Regression model testing effect of family problems on experienced job demands.

Variable	*B*	*t*	95% CI
Family Problems (FP)	.08	3.65***	[.04, .13]
Gender	.05	2.40**	[.06, .64]
Age	.04	1.69	[−.001, .02]
Highest Level of Education	.11	4.71***	[.08, .20]
Total Household Income	.04	1.95	[.00, .00]
Weekly Hours Worked	.25	11.24***	[.05, .07]
Negative Affect	.19	8.57***	[.97, 1.54]

$F(7, 1898) = 41.62$ ***, $R^2 = .133$, $n = 1905$.
* $p < .05$; ** $p < .01$; *** $p < .001$.

Table 3. Moderated regression model testing interactions between working memory, family problems, and work resources on experienced job demands.

Variable	*B*	*t*	95% CI
Interaction of WM & FP	−.07	−−2.95**	[−.08, −.02]
Interaction of FP & WR	.02	.83	[−.00, .01]
Gender	.06	2.38*	[.07, .69]
Age	.03	1.15	[−.00, .02]
Highest Level of Education	.11	4.51***	[.08, .21]
Total Household Income	.05	1.93	[.00, .00]
Weekly Hours Worked	.21	8.35***	[.04, .06]
Negative Affect	.21	8.83***	[1.08, 1.69]

$F(8, 1538) = 25.19$ ***, $R^2 = .12$, $n = 1546$.
* $p < .05$; ** $p < .01$; *** $p < .001$.

moderating effect of working memory on the influence of family problems on experienced job demands was not contingent on level of work resources such as decision authority or support from co-workers. Finally, Table 5 provides the regression results when all the regression terms and their interactions are included simultaneously in the model. These results are in line with those just presented.[2]

The two-way interaction of working memory and family problems (***H2***) indicates that the relationship between family problems and job demands depended on working memory capacity. We thus re-ran the regression analyses with these two predictors and examined the simple slopes for individuals at high (+1 *SD*; $b = .02$, 95% C.I. (−.53, .57), $t < 1$), medium (−1 to +1 *SD*; $b = .09$, 95% C.I. (.03, .15), $t = 3.097$, $p = .002$), and low (−1 *SD*; $b = .535$, 95% C.I. (−.13, 1.18), $t = 1.589$, $p = .114$) levels of working memory. First, at low levels of family problems, job demands are overall lower, and working memory appears to minimally distinguish individuals' reports of experienced job demands. However, this changes as family problems increase. Comparing the low and medium family problems groups, the simple slope for individuals at a medium level of working memory is significant, although the low working memory shows a similar pattern. Family problems predict greater experienced job demands for individuals with a medium level of working memory. For individuals with high working memory, no significant relationship exists between family problems and job demands. As illustrated in Figure 1, the slope for individuals higher in working memory is almost flat – increases in family problems do not appear to translate into greater experienced job demands. This suggests that individuals with higher working memory are relatively buffered from the effects of family problems on experienced job demands. This finding is consistent

Table 4. Regression model testing three-way interaction of working memory, family problems, and work resources on experienced job demands.

Variable	*B*	*t*	95% CI
Three-way Interaction of WM, FP, & WR	.03	1.28	[−.00, .01]
Gender	.06	2.43*	[.07, .70]
Age	.03	1.20	[−.00, .02]
Highest Level of Education	.11	4.50***	[.08, .21]
Total Household Income	.04	1.75	[.00, .00]
Weekly Hours Worked	.22	8.49***	[.04, .06]
Negative Affect	.21	8.61***	[1.05, 1.66]

$F(7, 1539) = 27.54$ ***, $R^2 = .11$, $n = 1546$.
* $p < .05$; ** $p < .01$; *** $p < .001$.

Table 5. Moderated regression model of working memory, family problems, and work resources on experienced job demands.

Variable	*B*	*t*	95% CI
Family Problems (FP)	.08	3.35***	[.04, .14]
Working Memory (WM)	−.01	−.44	[−.13, .08]
Work Resources (WR)	−.03	−.992	[−.03, .01]
Interaction of WM & FP	−.07	−−2.92**	[−.09, −.02]
Interaction of WM & WR	.01	.345	[−.01, .01]
Interaction of FP & WR	.03	1.20	[−.00, .01]
Three-way Interaction of WM, FP, & WR	.03	1.12	[−.00, .01]
Gender	.05	2.02*	[.01, .64]
Age	.02	.972	[−.01, .02]
Highest Level of Education	.12	4.53***	[.08, .21]
Total Household Income	.05	2.07*	[.00, .00]
Weekly Hours Worked	.21	8.06***	[.04, .06]
Negative Affect	.19	7.54***	[.91, 1.55]

$F(13, 1533) = 16.62$ ***, $R^2 = .12$, $n = 1546$.
* $p < .05$; ** $p < .01$; *** $p < .001$.

with the proposal of a segmentation process that is enabled by the presence of working memory.

Thus, we find support for the idea that working memory may help contain the intrusive and distracting effects of family problems on experienced job demands. Importantly, the pattern of findings indicates that the findings are not simply attributable to the effects of negative affect or other available resources.

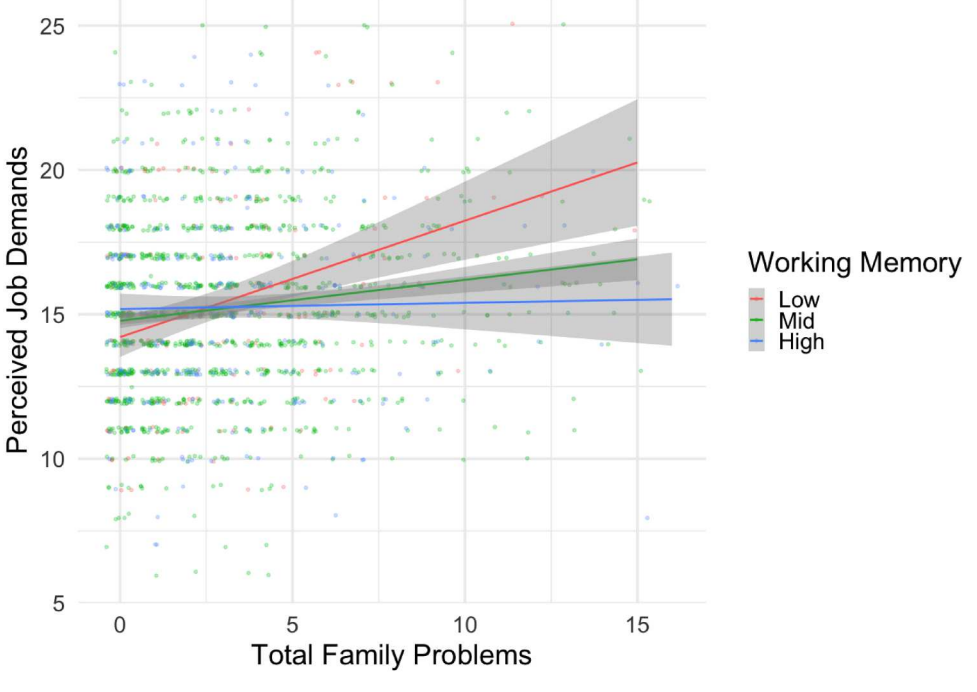

Figure 1. Working memory interacts with family problems to predict experienced job demands.
Note: Plotted scores are the predicted values.

Bootstrap analyses

What follows is a set of analyses to further assess the robustness of the results. For this we conducted additional regression analyses using 1000 bootstrap samples. The bootstrap analyses indicated a significant interaction of working memory and family problems ($b = -.052$, $SE = .02$, $p = .013$, C.I. (−.09, −.01)).

Discussion

Our aims in the present work were to examine whether (a) individuals who have a greater number of family problems experience greater job demands, and (b) whether this relationship is moderated by individual differences in working memory ability as well as work resources. Examining a large, representative dataset of working individuals, we find support for two of the four proffered hypotheses (*H1* & *H2*). We did not find support for the role of work resources in the present results (*H3*). As well, the suggestion that the effect of working memory might depend on level of work resources was not supported by the analyses (*H4*).

The present results indicate that overall, a greater number of family problems is generally related to experiencing one's work as more demanding. Individuals who report more family problems are more likely to report higher job demands, even when accounting for relevant covariates. These findings provide additional support for the family-work conflict and spillover linkages (Edwards & Rothbard, 2000) and indicates that stress in one sphere of life (e.g. family) can permeate other spheres and negatively affect them (e.g. work) (Boles et al., 2001; Crouter, 1984; Frone et al., 2011; Geurts, 2006; Keene & Reynolds, 2005; Williams & Alliger, 1994). However, unlike much of previous work on family-work conflict and spillover, the present research did not rely on people's judgments that their family/home life affected their experiences at work, but instead assessed actual family problems without mention of their possible effects on work. Nevertheless, experienced family problems seeped into individuals' assessments of their work.

What is most noteworthy, however, is that working memory ability moderates the extent to which family problems influence experiencing one's work as more demanding. Specifically, individuals with lower working memory report increasing job demands with increasing number of family problems; however, this relationship does not hold for individuals high in working memory. Consistent with a segmentation process between family and work, this finding suggests that individuals with higher working memory may have an increased ability to prevent the stresses of the family domain from acting as a distraction to their work. Not being able to abide by the Vegas rule at work has cognitive costs. By acting as a distraction, family problems strain cognitive resources like attention, which can decrease individuals' experienced sense of control and efficacy at work (Xanthopoulou et al., 2007). In turn, this perception can lead to experiencing one's jobs as more demanding; individuals who can resist these distractions should experience their jobs as less demanding and the execution of their jobs as within their control.

The pattern of findings suggests that working memory is less critical and may matter minimally for individuals who have fewer family problems, consistent with the idea that they act as a distraction. That is, when there are fewer family problems, there is little need to utilize working memory abilities to manage one's responses to distraction. However,

when one has more family problems to contend with, the differences in working memory become more evident. Individuals with lower working memory report experiencing greater job demands, but individuals with higher working memory are relatively buffered from this increase. Of note, our findings do not suggest that individuals with higher working memory experience fewer family problems[3], but when these stressors are present, improved working memory appears to help individuals reduce these intrusions from impacting their work.

The present findings are consistent with extant research suggesting that mental abilities are important for how one experiences family and work life. For example, individuals who are better at cognitively separating the emotions associated with work and family show less performance and wellbeing decreases when family interferes with work; conversely, those who have difficulty establishing these psychological boundaries show increased negative outcomes at work (Dumas & Sanchez-Burks, 2015; Rothbard, 2001). More broadly, those who are cognitively fatigued show trouble effectively transitioning across their different role boundaries (Allen et al., 2014). These variables of 'cognitive fatigue' and 'cognitive separation' suggest that measurable cognitive functions, such as working memory as studied in this research, are related to managing attention when distractions are involved.

Theoretically, we have proposed that family problems can intrude on one's focus at work to create distractions (Allen et al., 2014; Lapierre et al., 2012), with individuals' attention focused on the intrusive strains rather than on what their jobs demand (Crouter, 1984; Smit et al., 2016; Voydanoff, 2004). For example, at work individuals may be ruminating about family problems, leaving them anxious or otherwise distracted. Similarly, individuals may be preoccupied with tasks that they feel have been left uncompleted, akin to a Zeigarnik effect of having unfulfilled goals that continue to preoccupy them. Although we generally consider distractions at work to involve the desk phone ringing, or distracting co-worker conversations that reach around cubicles, we can also think of entire domains of life – such as one's home and family life – as distractions (Cardenas et al., 2004; Carlson & Frone, 2003). Because such distractions make demands on individuals' attention (Masicampo & Baumeister, 2011; Smit et al., 2016), less of this limited resource will be available to individuals for dealing with work tasks. This should result in the experience of one's work as more stressful and demanding to the extent that individuals do not possess the requisite working memory for managing their attention when confronted with such distractions.

Before leaving discussion of the findings to take on broader connections to the family-work linkage, it is useful to discuss the task used to measure working memory in this study, which appears very simple. First, it is important to note that the task serves as an assay of an enduring cognitive ability in that there are stable individual differences in working memory capacity. Simple working memory tasks such as the one used in this study have been applied successfully to predict performance in very complex environments. In one study, for example, experienced United States military pilots performed complicated flight simulations while undergoing several hours of sleep deprivation (Lopez et al., 2012). The study findings showed that performance was predicted by two simple assessments, one of which was working memory. That assessment involved recalling a string of letters while doing a simple arithmetic task. Thus, although such tasks

are on the surface simple, they provide a reliable measure of a cognitive ability that can be used to deal with various challenging and complicated tasks.

Theoretical implications

Consistent with the work of Edwards and Rothbard (2000), the present findings indicate that different family-work linkages can co-occur. First, the findings showing that increases in family problems predict increased experienced job demands speak to the linkage of *family-work conflict* as well as *spillover*, in that outcomes in one domain (family) end up resembling those in the other (work), for example, in terms of strain. However, the findings also show that a pattern consistent with *segmentation* occurred for some individuals, driven by the moderator of working memory. For individuals with higher working memory, increased family problems did not translate into an increase in experienced job demands. This latter finding also provides support for proposals suggesting that personal resources can help to moderate the relationship between family and work (ten Brummelhuis & Bakker, 2012). In addition, the findings are consistent with our proposal that working memory may operate as a 'key' resource that is critical to managing and reducing the depletion of other personal resources such as attention.

The present findings may also inform theoretical frameworks that deal with boundary theory (Ashforth et al., 2000; Nippert-Eng, 1996). For example, boundary theory suggests that people occupy different roles and create role-related identities (Ashforth et al., 2000). These roles can vary in how structurally segmented or integrated they are, which has implications for the ease with which individuals can transition from one role to another. According to Ashforth et al. (2000), keeping different spheres of life separate reduces blurring, which may bring peace of mind (Mandler, 1990), enabling the individual to immerse themselves in a role. In contrast, the greater the integration of roles, the more difficulty in maintaining boundaries and thus the greater potential for confusion and interruptions.

Boundary theory as envisioned by Ashforth et al. (2000) can be thought of as structural in nature, in that roles and the requirements of those roles determine the possibility for mental transitions. This is also evident in their proposal that strong situations (Mischel, 1977), for example, by requiring certain hours of arrival at work, and specific standards and policing of those standards, can negate transitions even when such transitions are more likely. The present findings suggest, though, that just because people have a common understanding of what is expected in a situation and a willingness to abide by those expectations does not mean they will be able to do so. As noted with the executive coach in the introduction, preferences and desires matter, but so does ability. The present research suggests that individuals with better working memory ability should be better able to abide by those expectations and achieve Mandler's (1990) 'mental peace' so they can focus on their work. More broadly, we provide empirical evidence that beyond self-report, measurable and relevant cognitive functions support the segmentation of different roles and help maintain domain boundaries. To our knowledge, this work is the first to show that cognitive performance measures – working memory – directly interact with objective family problems to influence how people experience their work.

Practical implications

Given that 85% of employees have some type of family responsibility (Eby et al., 2005), and that at some point in time most people will experience different family problems, the impact of such problems on work seems inevitable, particularly as the modern workplace continues to emphasize the integration or role blurring of family and work, with policies that are flexible for where and when employees work (e.g. work from home) (Barney & Elias, 2010). Although policies that integrate work and family can confer positive benefits (Kossek et al., 2006), they can also increase the likelihood that family life will intrude on one's work by increasing the porousness of the borders between work and family (Dumas & Sanchez-Burks, 2015).

These factors underscore the importance of understanding how to effectively deal with these intrusions from family life to one's work when they occur and in managing the strain that they bring. We now discuss some implications these cognitive findings have for individuals and organizations.

The present research suggests that sharp cognitive functioning, in particular the ability to maintain attention on work demands amidst distractions, may not only be important for how well individuals perform on work tasks, but also for how well they regulate stress that may interfere with work productivity and wellbeing. Of course, family problems that intrude are inherently stress that has not been adequately dealt with, that seeps through into work. Thus, organizations may wish to pay greater attention to interventions that boost cognitive function in employees.

For example, computerized cognitive training programs that have individuals practice the deliberate control of working memory may help individuals with weaker working memory improve, and allow all individuals to keep them in practice (Bomyea & Amir, 2011; Dahlin et al., 2008; Diamond & Lee, 2011; Karbach & Kray, 2009; Salminen et al., 2012). In turn, these may help individuals better prevent and cope with the intrusive effects of family problems when they are at work.

Besides cognitive training, practicing other interventions that focus on managing one's attention may be helpful. Notably, mindfulness interventions have individuals pay purposeful and non-judgmental attention to their present thoughts, states, or sensations (Cullen, 2011). This awareness of one's current role and thoughts can help individuals decrease stress, balance family and work life, and better maintain one's focus at work (Allen et al., 2014; Allen & Kiburz, 2012; Cullen, 2011). Accordingly, endeavoring to be mindful of one's attention at work may help individuals prevent thoughts about family problems from intruding on their work, as well as potentially help those with lower cognitive function improve their ability to manage their attention (see Whitfield et al., 2022).

Limitations and future directions

Of note, although we examined one job outcome – experienced job demands – the present data are limited in allowing us to examine other job-related outcomes. It is important to note though that job demands predict important outcomes, including job performance and burnout (Bakker et al., 2004), employee wellbeing (de Jonge et al., 2000), and sickness duration and frequency (Schaufeli et al., 2009), for example. As noted earlier, research has also shown that job demands reported at time 1 predicted negative

cardiovascular symptoms in employees at time 2 (Karasek et al., 1981). Job demands are an important metric of how individuals think about and experience their work.

We also note that job demands do not in themselves imply high levels of stress or great difficulty in handling one's job adequately because demanding jobs can be associated with job resources such as greater choice, autonomy and support from co-workers (e.g. Bakker & Demerouti, 2017). In the present research the reported pattern of findings emerged even when we considered work resources, as well as education, which is typically associated with greater levels of responsibility and demands at work.

Given that this work is correlational, we cannot entirely rule out alternative explanations of reverse causality. However, what should be pointed out is that family problems were measured very concretely, in terms of the presence or absence of different family problems. Also, participants did not report on any problems they were personally experiencing, nor were they asked to report their thoughts or reactions in response to the family problems. Given this, it seems unlikely that experiencing one's job as demanding would result in individuals reporting the presence of a problem when there was not one, for example, a child's legal problems or that one of their parents had a chronic health condition. Nevertheless, the possibility remains that experiencing one's work as increasingly demanding could affect responses and reactions to the family problems people are experiencing (see Voydanoff, 2004). Further, it is possible that higher job demands could consume cognitive resources that might be deployed to respond more adaptively to the family problems people are facing.

Future research should continue to investigate the impact of the influence of family problems on the workplace beyond experienced job demands. For example, given that job strain often results in downstream consequences (e.g. higher rates of job attrition), future research may wish to examine whether working memory may also moderate the extent to which these consequences occur. Likewise, future research should examine whether short-term 'boosts' or replenishments to cognitive functioning predict improved ability to fend off unwanted distractions.

Conclusions

Negative events that occur in one sphere of life – family – can affect how individuals think and perform at work. Our present study found that individuals with a greater number of family problems are more likely to experience their work as demanding. Of particular note, this relationship is attenuated when individuals have high levels of working memory. This suggests that individuals with more cognitive resources may be better at regulating and resisting family stressors from intruding upon their workplace mindset.

Notes

1. The Positive and Negative Affect Schedule (Watson et al., 1988) assessed individuals' levels of negative ($\alpha = .80$) affect. Respondents were asked to indicate how much of the time in the past thirty days they have felt various negative (e.g., upset) emotions (none of the time, a little of the time, some of the time, most of the time, all of the time).
2. We ran the analyses separately for males and females. The interaction of working memory and family problems predicting job demands was significant for females ($t = -1.97$, $p = .049$) and marginal for males ($t = -1.73$, $p = .084$).

3. Zero-order bivariate correlations show that working memory and family problems are not correlated ($r = .02$).

Disclosure statement

No potential conflict of interest was reported by the author(s).

Data availability statement

Data are available through ICPSR (Midus 2 & Midus 2 cognitive project) _https://www.icpsr.umich.edu/web/pages/

Notes on contributors

Oscar Ybarra is professor of organizational behavior at the University of Illinois. He is also emeritus professor of psychology, and of management and organizations at the University of Michigan. Dr. Ybarra teaches leadership and negotiations, as well as courses on intelligence. His research interests revolve around the influence different relationship systems have on individual functioning and achievement.

Todd Chan received his PhD from the University of Michigan. He is a researcher in industry, having worked with Uber, Facebook, and now Google where he is a senior research scientist.

References

Allen, T. D., Cho, E., & Meier, L. L. (2014). Work–family boundary dynamics. *Annual Review of Organizational Psychology and Organizational Behavior*, *1*(1), 99–121. doi:10.1146/annurev-orgpsych-031413-091330

Allen, T. D., & Kiburz, K. M. (2012). Trait mindfulness and work–family balance among working parents: The mediating effects of vitality and sleep quality. *Journal of Vocational Behavior*, *80* (2), 372–379. doi:10.1016/j.jvb.2011.09.002

Ashforth, B. E., Kreiner, G. E., & Fugate, M. (2000). All in a day's work: Boundaries and micro role transitions. *The Academy of Management Review*, *25*(3), 472–491. doi:10.2307/259305

Baddeley, A. (1992). Working memory: The interface between memory and cognition. *Journal of Cognitive Neuroscience*, *4*(3), 281–288. doi:10.1162/jocn.1992.4.3.281

Bakker, A. B., & Demerouti, E. (2017). Job demands–resources theory: Taking stock and looking forward. *Journal of Occupational Health Psychology*, *22*(3), 273–285. doi:10.1037/ocp0000056

Bakker, A. B., Demerouti, E., & Verbeke, W. (2004). Using the job demands-resources model to predict burnout and performance. *Human Resource Management: Published in cooperation with the school of business administration, The University of Michigan and in Alliance with the Society of Human Resources Management*, *43*(1), 83–104.

Barney, C. E., & Elias, S. M. (2010). Flex-time as a moderator of the job stress-work motivation relationship. *Personnel Review*, *39*(4), 487–502. doi:10.1108/00483481011045434

Baumeister, R. F., & Heatherton, T. F. (1996). Self-regulation failure: An overview. *Psychological Inquiry*, *7*(1), 1–15. doi:10.1207/s15327965pli0701_1

Bergomi, C., Tschacher, W., & Kupper, Z. (2013). The assessment of mindfulness with self-report measures: Existing scales and open issues. *Mindfulness*, *4*(3), 191–202. doi:10.1007/s12671-012-0110-9

Boles, J. S., Howard, W. G., & Donofrio, H. H. (2001). An investigation into the inter-relationships of work-family conflict, family-work conflict and work satisfaction. *Journal of Managerial Issues*, *13*(3), 376–390.

Bomyea, J., & Amir, N. (2011). The effect of an executive functioning training program on working memory capacity and intrusive thoughts. *Cognitive Therapy and Research*, *35*(6), 529–535. doi:10.1007/s10608-011-9369-8

Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology*, *84*(4), 822–848. doi:10.1037/0022-3514.84.4.822

Burke, R. J., & Greenglass, E. R. (1987). Work and family. In C. L. Cooper & I. T. Robertson (Eds.), *International review of industrial and organizational psychology* (pp. 273–320). Wiley.

Cardenas, R. A., Major, D. A., & Bernas, K. H. (2004). Exploring work and family distractions: Antecedents and outcomes. *International Journal of Stress Management*, *11*(4), 346–365. doi:10.1037/1072-5245.11.4.346

Carlson, D. S., & Frone, M. R. (2003). Relation of behavioral and psychological involvement to a new four-factor conceptualization of work-family interference. *Journal of Business and Psychology*, *17*(4), 515–535. doi:10.1023/A:1023404302295

Carver, C. S., & Scheier, M. F. (1998). *On the self-regulation of behavior*. New York: Cambridge University Press.

Champoux, J. E. (1978). Perceptions of work and nonwork: A reexamination of the compensatory and spillover models. *Sociology of Work and Occupations*, *5*(4), 402–422. doi:10.1177/073088847800500402

Chan, T., Wang, I., & Ybarra, O. (2021). Leading and managing the workplace: The role of executive functions. *Academy of Management Perspectives*, *35*(1), 142–164. doi:10.5465/amp.2017.0215

Crouter, A. C. (1984). Spillover from family to work: The neglected side of the work-family interface. *Human Relations*, *37*(6), 425–441. doi:10.1177/001872678403700601

Cullen, M. (2011). Mindfulness-based interventions: An emerging phenomenon. *Mindfulness*, *2*(3), 186–193. doi:10.1007/s12671-011-0058-1

Dahlin, E., Nyberg, L., Bäckman, L., & Neely, A. S. (2008). Plasticity of executive functioning in young and older adults: Immediate training gains, transfer, and long-term maintenance. *Psychology and Aging*, *23*(4), 720–730. doi:10.1037/a0014296

Daneman, M., & Carpenter, P. A. (1980). Individual differences in working memory and reading. *Journal of Verbal Learning and Verbal Behavior*, *19*(4), 450–466. doi:10.1016/S0022-5371(80)90312-6

de Jonge, J., Bosma, H., Peter, R., & Siegrist, J. (2000). Job strain, effort-reward imbalance and employee well-being: A large-scale cross-sectional study. *Social Science & Medicine*, *50*(9), 1317–1327. doi:10.1016/S0277-9536(99)00388-3

Diamond, A., & Lee, K. (2011). Interventions shown to aid executive function development in children 4 to 12 years old. *Science*, *333*(6045), 959–964. doi:10.1126/science.1204529

Dresdale, R. (2016). *Millenials, stop letting personal issues impact your work*. Forbes.

Du, D., Derks, D., & Bakker, A. B. (2018). Daily spillover from family to work: A test of the work–home resources model. *Journal of Occupational Health Psychology*, *23*(2), 237–247. doi:10.1037/ocp0000073

Dumas, T. L., & Sanchez-Burks, J. (2015). The professional, the personal, and the ideal worker: Pressures and objectives shaping the boundary between life domains. *Academy of Management Annals*, *9*(1), 803–843. doi:10.5465/19416520.2015.1028810

Eby, L. T., Casper, W. J., Lockwood, A., Bordeaux, C., & Brinley, A. (2005). Work and family research in IO/OB: Content analysis and review of the literature (1980–2002). *Journal of Vocational Behavior*, *66*(1), 124–197. doi:10.1016/j.jvb.2003.11.003

Eckenrode, J., & Gore, S. (1990). Stress and coping at the boundary of work and family. In *Stress between work and family* (pp. 1–16). Boston, MA: Springer.

Edwards, J. R., & Rothbard, N. P. (2000). Mechanisms linking work and family: Clarifying the relationship between work and family constructs. *The Academy of Management Review*, *25*(1), 178–199. doi:10.2307/259269

Engle, R. W. (2002). Working memory capacity as executive attention. *Current Directions in Psychological Science*, *11*(1), 19–23. doi:10.1111/1467-8721.00160

Frone, M. R., Russell, M., & Cooper, M. L. (1994). Relationship between job and family satisfaction: Causal or noncausal covariation? *Journal of Management*, *20*(3), 565–579. doi:10.1177/014920639402000303

Frone, M. R., Russell, M., & Cooper, M. L. (2011). Relation of work-family conflict to health outcomes: A four-year longitudinal study of employed parents. *Journal of Occupational and Organizational Psychology*, *70*(4), 325–335. doi:10.1111/j.2044-8325.1997.tb00652.x

Geurts, S. (2006). Types of work-family interface: Well-being correlates of negative and positive spillover between work and family. *Scandinavian Journal of Psychology*, *47*(2), 149–162. doi:10.1111/j.1467-9450.2006.00502.x

Greenhaus, J. H., & Beutell, N. J. (1985). Sources of conflict between work and family roles. *The Academy of Management Review*, *10*(1), 76–88. doi:10.2307/258214

Hall, P. A., Fong, G. T., Epp, L. J., & Elias, L. J. (2008). Executive function moderates the intention-behavior link for physical activity and dietary behavior. *Psychology & Health*, *23*(3), 309–326. doi:10.1080/14768320701212099

Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist*, *44*(3), 513–524. doi:10.1037/0003-066X.44.3.513

Hobfoll, S. E. (2002). Social and psychological resources and adaptation. *Review of General Psychology*, *6*(4), 307–324. doi:10.1037/1089-2680.6.4.307

Hofmann, W., Gschwendner, T., Friese, M., Wiers, R. W., & Schmitt, M. (2008). Working memory capacity and self-regulatory behavior: Toward an individual differences perspective on behavior determination by automatic versus controlled processes. *Journal of Personality and Social Psychology*, *95*(4), 962–977. doi:10.1037/a0012705

Hofmann, W., Schmeichel, B. J., & Baddeley, A. D. (2012). Executive functions and self-regulation. *Trends in Cognitive Sciences*, *16*(3), 174–180. doi:10.1016/j.tics.2012.01.006

Judge, T. A., Erez, A., & Thoresen, C. J. (2000). Why negative affectivity (and self-deception) should be included in job stress research: Bathing the baby with the bath water. *Journal of Organizational Behavior*, *21*(1), 101–111. doi:10.1002/(SICI)1099-1379(200002)21:1<101::AID-JOB966>3.0.CO;2-Q

Judge, T. A., & Watanabe, S. (1994). Individual differences in the nature of the relationship between job and life satisfaction. *Journal of Occupational and Organizational Psychology*, *67*(2), 101–107. doi:10.1111/j.2044-8325.1994.tb00554.x

Kahn, R. L., & Quinn, R. P. (1970). Role stress: A framework for analysis. In A. Mclean (Ed.), *Occupational mental health* (pp. 50–115). Rand McNally.

Kando, T. M., & Summers, W. C. (1971). The impact of work on leisure: Toward a paradigm and research strategy. *The Pacific Sociological Review*, *14*(3), 310–327. doi:10.2307/1388645

Karasek, R., Baker, D., Marxer, F., Ahlbom, A., & Theorell, T. (1981). Job decision latitude, job demands, and cardiovascular disease: A prospective study of Swedish men. *American Journal of Public Health*, *71*(7), 694–705. doi:10.2105/AJPH.71.7.694

Karasek, R. A., Jr. (1979). Job demands, job decision latitude, and mental strain: Implications for job redesign. *Administrative Science Quarterly*, *24*(2), 285–308. doi:10.2307/2392498

Karbach, J., & Kray, J. (2009). How useful is executive control training? Age differences in near and far transfer of task-switching training. *Developmental Science*, *12*(6), 978–990. doi:10.1111/j.1467-7687.2009.00846.x

Keene, J. R., & Reynolds, J. R. (2005). The job costs of family demands gender differences in negative family-to-work spillover. *Journal of Family Issues*, *26*(3), 275–299. doi:10.1177/0192513X04270219

Kossek, E. E., Lautsch, B. A., & Eaton, S. C. (2006). Telecommuting, control, and boundary management: Correlates of policy use and practice, job control, and work–family effectiveness. *Journal of Vocational Behavior*, *68*(2), 347–367. doi:10.1016/j.jvb.2005.07.002

Lachman, M. E., Agrigoroaei, S., Tun, P. A., & Weaver, S. L. (2014). Monitoring cognitive functioning: Psychometric properties of the brief test of adult cognition by telephone (BTACT). *Assessment*, *21*(4), 404–417. doi:10.1177/1073191113508807

Lambert, S. J. (1990). Processes linking work and family: A critical review and research agenda. *Human Relations*, *43*(3), 239–257. doi:10.1177/001872679004300303

Langer, E. J. (2014). *Mindfulness*. Da Capo Lifelong Books.

Lapierre, L. M., Hammer, L. B., Truxillo, D. M., & Murphy, L. A. (2012). Family interference with work and workplace cognitive failure: The mitigating role of recovery experiences. *Journal of Vocational Behavior*, *81*(2), 227–235. doi:10.1016/j.jvb.2012.07.007

Lavie, N. (2010). Attention, distraction, and cognitive control under load. *Current Directions in Psychological Science*, *19*(3), 143–148. doi:10.1177/0963721410370295

Li, Y., Tuckey, M. R., Bakker, A., Chen, P. Y., & Dollard, M. F. (2023). Linking objective and subjective job demands and resources in the JD-R model: A multilevel design. *Work and Stress*, *37*(1), 27–54.

Lopez, N., Previc, F. H., Fischer, J., Heitz, R. P., & Engle, R. W. (2012). Effects of sleep deprivation on cognitive performance by United States Air Force pilots. *Journal of Applied Research in Memory and Cognition*, *1*(1), 27–33. doi:10.1016/j.jarmac.2011.10.002

Mandler, G. (1967). Organization and memory. In K. W. Spence & J. Taylor (Eds.), *Psychology of learning and motivation* (Vol. 1, pp. 327–372). Academic Press.

Mandler, G. (1990). Interruption (discrepancy) theory: Review and extensions. *On the Move: The Psychology of Change and Transition*, *13*, 32.

Masicampo, E. J., & Baumeister, R. F. (2011). Unfulfilled goals interfere with tasks that require executive functions. *Journal of Experimental Social Psychology*, *47*(2), 300–311. doi:10.1016/j.jesp.2010.10.011

Mischel, W. (1977). The interaction of person and situation. *Personality at the crossroads: Current Issues in Interactional Psychology*, *333*, 352.

Near, J. P. (1984). Predictive and explanatory models of work and nonwork. *Management of Work and Personal Life: Problems and Opportunities*, 67–85.

Near, J. P., Rice, R. W., & Hunt, R. G. (1980). The relationship between work and nonwork domains: A review of empirical research. *The Academy of Management Review*, *5*(3), 415–429. doi:10.2307/257117

Nippert-Eng, C. (1996). Calendars and keys: The classification of "home" and "work". *Sociological Forum*, *11*(3), 563–582. doi:10.1007/BF02408393

Nohe, C., Michel, A., & Sonntag, K. (2014). Family–work conflict and job performance: A diary study of boundary conditions and mechanisms. *Journal of Organizational Behavior*, *35*(3), 339–357. doi:10.1002/job.1878

Payton-Miyazaki, M., & Brayfield, A. H. (1976). The good job and the good life: Relationship of characteristics of employment to general well-being. In A. D. Biderman & T. F. Drury (Eds.), *Measuring work quality for social reporting* (pp. 105–150). Sage.

Piotrkowski, C. S. (1979). *Work and the family system*. Collier Macmillan.

Pushkar, D., Basevitz, P., Arbuckle, T., Nohara-LeClair, M., Lapidus, S., & Peled, M. (2000). Social behavior and off-target verbosity in elderly people. *Psychology and Aging*, *15*(2), 361–374. doi:10.1037/0882-7974.15.2.361

Redick, T. S. (2016). On the relation of working memory and multitasking: Memory span and synthetic work performance. *Journal of Applied Research in Memory and Cognition*, *5*(4), 401–409. doi:10.1016/j.jarmac.2016.05.003

Repetti, R. L. (1987). Linkages between work and family roles. *Applied Social Psychology Annual*, *7*, 98–127.

Rothbard, N. P. (2001). Enriching or depleting? The dynamics of engagement in work and family roles. *Administrative Science Quarterly*, *46*(4), 655–684. doi:10.2307/3094827

Rothbard, N. P., Beetz, A. M., & Harari, D. (2021). Balancing the scales: A configurational approach to work-life balance. *Annual Review of Organizational Psychology and Organizational Behavior*, *8*(1), 73–103. doi:10.1146/annurev-orgpsych-012420-061833

Ruedy, N. E., & Schweitzer, M. E. (2010). In the moment: The effect of mindfulness on ethical decision making. *Journal of Business Ethics*, *95*(S1), 73–87. doi:10.1007/s10551-011-0796-y

Salminen, T., Strobach, T., & Schubert, T. (2012). On the impacts of working memory training on executive functioning. *Frontiers in Human Neuroscience*, *6*, 44–57. doi:10.3389/fnhum.2012.00166

Schaufeli, W. B., Bakker, A. B., & Van Rhenen, W. (2009). How changes in job demands and resources predict burnout, work engagement, and sickness absenteeism. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, *30*(7), 893–917.

Schmeichel, B. J., & Demaree, H. A. (2010). Working memory capacity and spontaneous emotion regulation: High capacity predicts self-enhancement in response to negative feedback. *Emotion*, *10*(5), 739–744. doi:10.1037/a0019355

Small, S. A., & Riley, D. (1990). Toward a multidimensional assessment of work spillover into family life. *Journal of Marriage and the Family*, *52*(1), 51–61. doi:10.2307/352837

Smit, B. W., Maloney, P. W., Maertz, C. P., Jr., & Montag-Smit, T. (2016). Out of sight, out of mind? How and when cognitive role transition episodes influence employee performance. *Human Relations*, *69*(11), 2141–2168. doi:10.1177/0018726716636204

Staines, G. L. (1980). Spillover versus compensation: A review of the literature on the relationship between work and nonwork. *Human Relations*, *33*(2), 111–129. doi:10.1177/001872678003300203

Stevens, D. P., Minnotte, K. L., Mannon, S. E., & Kiger, G. (2007). Examining the "neglected side of the work-family interface" Antecedents of positive and negative family-to-work spillover. *Journal of Family Issues*, *28*(2), 242–262. doi:10.1177/0192513X06294548

Stoeva, A. Z., Chiu, R. K., & Greenhaus, J. H. (2002). Negative affectivity, role stress, and work–family conflict. *Journal of Vocational Behavior*, *60*(1), 1–16. doi:10.1006/jvbe.2001.1812

Sutcliffe, K. M., Vogus, T. J., & Dane, E. (2016). Mindfulness in organizations: A cross-level review. *Annual Review of Organizational Psychology and Organizational Behavior*, *3*(1), 55–81. doi:10.1146/annurev-orgpsych-041015-062531

ten Brummelhuis, L. L., & Bakker, A. B. (2012). A resource perspective on the work–home interface: The work–home resources model. *American Psychologist*, *67*(7), 545–556. doi:10.1037/a0027974

Tun, P. A., & Lachman, M. E. (2006). Telephone assessment of cognitive function in adulthood: The brief test of adult cognition by telephone. *Age and Ageing*, *35*(6), 629–632. doi:10.1093/ageing/afl095

Unsworth, N., & Engle, R. W. (2007). The nature of individual differences in working memory capacity: Active maintenance in primary memory and controlled search from secondary memory. *Psychological Review*, *114*(1), 104–132. doi:10.1037/0033-295X.114.1.104

Van Hooren, S., Valentijn, A. M., Bosma, H., Ponds, R., Van Boxtel, M., & Jolles, J. (2007). Cognitive functioning in healthy older adults aged 64–81: A cohort study into the effects of age, sex, and education. *Aging, Neuropsychology, and Cognition*, *14*(1), 40–54. doi:10.1080/138255890969483

Voydanoff, P. (2004). The effects of work demands and resources on work-to-family conflict and facilitation. *Journal of Marriage and Family*, *66*(2), 398–412. doi:10.1111/j.1741-3737.2004.00028.x

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, *54*(6), 1063–1070. doi:10.1037/0022-3514.54.6.1063

Whitfield, T., Barnhofer, T., Acabchuk, R., Cohen, A., Lee, M., Schlosser, M., Arenaza-Urquijo, E. M., Böttcher, A., Britton, W., Coll-Padros, N., Collette, F., Chételat, G., Dautricourt, S., Demnitz-King, H., Dumais, T., Klimecki, O., Meiberth, D., Moulinet, I., Müller, T., … Marchant, N. L. (2022). The effect of mindfulness-based programs on cognitive function in adults: A systematic review and meta-analysis. *Neuropsychology Review*, 1–26.

Williams, K. J., & Alliger, G. M. (1994). Role stressors, mood spillover, and perceptions of work-family conflict in employed parents. *Academy of Management Journal*, *37*(4), 837–868. doi:10.2307/256602

Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2007). The role of personal resources in the job demands-resources model. *International Journal of Stress Management*, *14*(2), 121–141. doi:10.1037/1072-5245.14.2.121

Zedeck, S. E. (1992). *Work, families, and organizations*. Jossey-Bass.