

Killing Me Softly: Organizational E-mail Monitoring Expectations' Impact on Employee and Significant Other Well-Being

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This paper tests the relationship between organizational expectations to monitor work-related electronic communication during nonwork hours and the health and relationship satisfaction of employees and their significant others. We integrate resource-based theories with research on interruptions to position organizational expectations for e-mail monitoring (OEEM) during nonwork time as a psychological stressor that elicits anxiety due to employee attention allocation conflict. E-mail-triggered anxiety, in turn, negatively affects the health and relationship quality of employees and their significant others. We conducted three studies to test our propositions. Using the experience sampling method with 108 working U.S. adults, Study 1 established within-employee effects of OEEM on anxiety, employee health, and relationship conflict. Study 2 used a sample of 138 dyads of full-time employees and their significant others to replicate detrimental health and relationship effects of OEEM through anxiety. It also showed crossover effects of OEEM on partner health and relationship satisfaction. Finally, Study 3 employed a two-wave data collection method with an online sample of 162 U.S. working adults to provide additional

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support for the OEEM construct as a distinct and reliable job stressor and replicated findings from Studies 1 and 2. Taken together, our research extends the literature on work-related electronic communication at the interface of work and nonwork boundaries, deepening our understanding of the impact of OEEM on employees and their families' health and well-being.

Keywords: *electronic communication; job demands-resources model; interruptions; anxiety; health; crossover effects*

In recent decades, the nature of work in the modern world has seen a number of trends that both support and challenge employees' ability to balance the demands of their work and nonwork lives (Demerouti, Derks, Lieke, & Bakker, 2014; Greenhaus & Kossek, 2014; Kurtzberg & Gibbs, 2017). In particular, technology has fueled the proliferation of mobile electronic devices, creating an always-on, connected society (Mazmanian, Orlikowski, & Yates, 2013; Turel, Serenko, & Bontis, 2011; Weber, 2004). Emerging research has examined work-family strain, resentment, and conflict due to the impact of mobile technology and changing work-family boundaries (e.g., Allen, Cho, & Meier, 2014; Barber & Santuzzi, 2015; Chen & Karahanna, 2018; Derks, Bakker, Peters, & van Wingerden, 2016; Ferguson, Carlson, Boswell, Whitten, Butts, & Kacmar, 2016; Ragsdale & Hoover, 2016).

Even though mobile technology, and e-mail in particular, increases flexibility around when and where work gets done (e.g., Diaz, Chiaburu, Zimmerman, & Boswell, 2012), some negative consequences of technology for employees and their families are a product of norms and interpretations surrounding its use (Barley, Meyerson, & Grodal, 2011). In fact, qualitative research has suggested that norms and expectations of constant availability are an important concern at the interface of e-mail and work-life boundaries (Mazmanian et al., 2013). Yet research that looks beyond material features (e.g., accessibility and flexibility) and time/frequency-based measures of use (e.g., frequency of engagement, daily use) to consider the role of norms surrounding technology use during nonwork time on employee well-being outcomes is scarce.

A few recent studies provide initial insights into the consequences of technology norms during nonwork time. From this research, it appears that employees who feel an urge to monitor and respond to work-related messages during nonwork time report lower detachment, more burnout, and lower sleep quality (Hu, Santuzzi, & Barber, 2019; Santuzzi & Barber, 2018). This research, however, does not directly speak to organizationally driven norms, as it focuses on the employee's urge to keep constantly connected, which may originate from several sources (e.g., work addiction). Even though it paves the way toward understanding employee immediate well-being outcomes, like sleep and detachment, it does not address longer term health outcomes or relationship quality, nor does it examine effects on immediate others (e.g., family). Other recent work has explored more general perceived segmentation norms, not focused on technology per se, (Gadeyne, Verbruggen, Delanoeije, & De Cooman, 2018; Park, Fritz, & Jex, 2011) and investigated employees' perceptions of the impact of technology during nonwork hours on partners. Extant research indicates that urges, norms, and expectations regarding technology use during nonwork hours are important considerations for health outcomes and the work-life interface. However, the field lacks a clear explanation for these relationships, beyond detachment and technology use. Furthermore, data on the broader impact of technology expectations are limited.

In the present research, we examine organizational expectations for e-mail monitoring (OEEM) as an important construct for understanding the insidious impact of a “tethered” society. We separate actual e-mail use from OEEM to propose that unlike typical job demands, OEEM creates an incessant attention allocation dilemma without finite limits that produces stress in the nonwork domain. By studying OEEM, we examine the specific norms established around technology in an organization, which provides an opportunity to explore a potential mediating mechanism. We define OEEM as an employee’s perception that he or she is expected to monitor electronic work communication during nonwork hours. That is, our conceptualization of OEEM is based on employee perceptions of organizational norms, whether explicit or implicit. These norms pose a constant dilemma of time and attention allocation among work and nonwork demands because they create extrinsic pressure to be aware of work while engaging in nonwork activities. We view OEEM as a distinct antecedent of negative effects on employees’ and their families’ emotional and physical well-being on the basis of emerging research on attention residue, which suggests that interruptions create an allocation dilemma (Jett & George, 2003; Leroy, 2009; Leroy & Glomb, 2018; Leroy & Schmidt, 2016; Schmidt & DeShon, 2007). We propose that this dilemma leads to electronic communication–related anxiety (e-anxiety), which subsequently hinders employee well-being and relationship quality. This approach expands on recent research regarding the role of negative affect in work–family boundary violations (Braukmann, Schmitt, Ďuranová, & Ohly, 2018; Hunter, Clark, & Carlson, 2019) to more precisely predict that the e-anxiety created by OEEM drives health and relationship outcomes. Furthermore, we examine its negative impact beyond the employee to suggest that partners may also experience the detrimental effects of OEEM and e-anxiety.

Our study makes several contributions to management theory and research. First, we extend research on resource-based theories of stress through the job demands-resources (JD-R) model (Bakker & Demerouti, 2007; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001) by conceptualizing and empirically testing a new norm-based technology job stressor—OEEM. We argue that the complexity of technology-assisted mobile work requires taking a more specific approach to defining technology-related job demands. Taking this more nuanced approach, we propose that the detrimental effects of work-related e-mail do not necessarily manifest themselves through physical time spent on work via e-mail or other mobile devices (e.g., mWork, or the frequency of technology use for work purposes during family time; Ferguson et al., 2016). Rather, we see OEEM as a unique stressor that creates a persistent attention allocation dilemma and, thus, elicits e-anxiety, which is negatively related to well-being outcomes of employees and their significant others. We argue that regardless of the actual involvement with work, salient norms for availability increase employee and significant other strain, even when not engaged in actual work during nonwork time (Belkin, Becker, & Conroy, 2016). Thus, we depict normative expectations for work e-mail monitoring during nonwork hours as a stressor, above and beyond actual workload and time spent on handling e-mail during nonwork hours.

Second, we develop and test a measure of the OEEM phenomenon. The conceptualization of e-mail–related job demands to date has mainly focused on types and frequency of interruptions (e.g., Addas & Pinsonneault, 2018; Chen & Karahanna, 2018; Freitas, Maçada, Brinkhues, & Montesdioca, 2016) and e-mail use (e.g., Boswell & Olson-Buchanan, 2007; Derks, van Duin, Tims, & Bakker, 2015; Diaz et al., 2012; Fenner & Renn, 2010; Ferguson et al., 2016; Ragsdale & Hoover, 2016; Tennakoon, Da Silveira, & Taras, 2013). Even though

this literature has established e-mail as a unique job demand (Brown, Duck, & Jimmieson, 2014; Ferguson et al., 2016; Reinke & Chamorro-Premuzic, 2014; Rosen, Simon, Gajendran, Johnson, Lee, & Lin, 2018), it has not separated actual work-related e-mail use during non-work hours from work e-mail-related normative expectations and monitoring. We also show that our subjective measure of employee perceptions regarding OEEM is related to employee monitoring behavior and actual managerial expectations for employee availability. Even though subjective perceptions are a strong motivator of behavior, they may vary on an individual level as a result of differences in individual cognitive styles or prior experiences (Ganster & Rosen, 2013). Accordingly, validating the association between managerial and employee perceptions is an important step in the measurement and use of OEEM as a research construct. We also differentiate OEEM from prior, more general measures of job demands and mobile technology use.

Third, we extend research on work interruptions (Jett & George, 2003) and attention residue (Leroy, 2009; Leroy & Glomb, 2018). The extant research in this domain has focused on how interruptions at work influence performance on interrupted and interrupting tasks (e.g., Addas & Pinsonneault, 2018; Leroy & Glomb, 2018; Speier, Vessey, & Valacich, 2003) or how e-mail-related interruptions at work affect exhaustion (Chen & Karahanna, 2018). By examining the negative effects of interruptions created by OEEM on employees' and their significant others' health and well-being, we extend this line of research to consider nonwork outcomes of attention allocation dilemmas. According to Leroy and Glomb (2018), interruptions create mental "open windows" that demand attention concurrently with other tasks at hand. We add to research on attention residue by examining how OEEM shapes employees' emotional and physical states, as well as their families' well-being, as a result of those "open windows." By integrating research on interruptions, we refine and extend the JD-R model by proposing and testing e-anxiety as a psychological mechanism for the effects of OEEM, which may drive negative employee and significant other well-being outcomes. Even though JD-R is a broad heuristic model that describes what kind of job characteristics are demands (hindrances and challenges), it often lacks specificity and psychological explanations as to why these outcomes occur (Schaufeli & Taris, 2014).

Finally, our findings inform research on the work-family interface by documenting how OEEM influences the employee's family's well-being outcomes. To our knowledge, this is one of the first studies to investigate not only employee well-being outcomes but also the crossover effects of "flexible" boundaries on significant others. Unlike other work-related demands that directly deplete individual employee physical and psychological resources by requiring time away from personal pursuits, the insidious impact of an "always-on" organizational culture is seemingly unaccounted for or disguised as a benefit, such as increased convenience or higher autonomy over work-life boundaries (Maertz & Boyar, 2011; Mazmanian et al., 2013). In contrast, our research suggests that in reality, "flexible work boundaries" often turn into "work without boundaries," compromising employees' and their families' health and well-being.

Organizational E-mail-Related Expectations and a Work-Nonwork Attention Allocation Dilemma

Resource-based theories of stress (Bakker & Demerouti, 2007; Bakker, Demerouti, & Dollard, 2008; Demerouti et al., 2001) posit that individual resources are limited and that

simultaneous demands on one's cognitive resources and energies (e.g., time and effort) intensify stress and increase strain on the individual. Specifically, resource investments in one domain shrink the resource pool available for investment in other domains. When work is interrupted by a competing task, employees then struggle to address multiple goals by allocating time and attention to these competing demands (Schmidt & DeShon, 2007). Thus, interruptions present a resource allocation dilemma, which should lead to increased employee stress.

The literature examining how interruptions affect individual attention and ability to be fully engaged established the "attention residue" phenomenon. This refers to cognitive mechanisms whereby thoughts or feelings about one task intrude on another task (Leroy, 2009) and lower performance in both the intended and the interrupting tasks (Leroy, 2009; Leroy & Glomb, 2018; Leroy & Schmidt, 2016). We propose that the inability to be present and engaged is the product of not only task interruptions but also attention residue and anticipatory stress due to normative expectations (OEEM). According to Leroy and Glomb (2018), anticipatory cognitions demand attention concurrently with the actual task at hand because of mental "open windows." Since one of the most cherished resources in close relationships is attention (Burpee & Langer, 2005), we maintain that when OEEM is high, employees cannot be fully psychologically present with their significant others even when they do not invest time in work tasks because their attention is directed towards, or frequently interrupted by, anticipation of and thoughts about work-related e-mails. We argue that OEEM creates a continuous attention allocation dilemma that leads to e-anxiety and negative well-being outcomes for employees and their families.

Anxiety as a Response to an OEEM-Triggered Attention Allocation Dilemma

High OEEM in the nonwork domain creates a dilemma for resource investments. Specifically, when goal achievement in the nonwork domain is threatened, subsequent negative affective responses, such as feelings of anxiety, are elicited (Barley et al., 2011). State anxiety is an "aversive emotional and motivational state triggered by threatening circumstances" (Eysenck, Derakshan, Santos, & Calvo, 2007: 336). Anxiety represents an "allostatic load," which is an initial adaptation to stress that is characterized by feelings of tension and hyperarousal (Ganster & Rosen, 2013; Watson, 2000). Anxiety typically arises when individual goals are hindered and uncertainty about the outcome is high (Lazarus, 1991). Accordingly, when one is faced with an attention allocation dilemma between work and nonwork tasks, anxiety should be an automatic emotional response to the tension between the two domains. For example, an employee may go for a nice dinner with his or her spouse and make small talk but not be able to engage in deeper conversation as a result of attention residue (Leroy, 2009), such as frequently thinking about or checking his or her smartphone because the employee is anxious about whether there are new e-mails from work.

Additionally, this attention dilemma triggered by OEEM can become a constant source of anxiety by overstimulation of employees' perceptions of their work self-efficacy (Bandura, 1977) for two reasons. One, employees may feel that they are not fulfilling nonwork roles because they are investing attention in work-related matters during nonwork time, thereby creating a vicious cycle of stress and anxiety over work e-mail. Two, constant e-mail monitoring may intensify negative thoughts and worry about some work tasks every time e-mail is checked. In fact, research findings indicate that attention residue created by frequent

switching/interruptions between nonrelated tasks impedes performance (Leroy, 2009; Leroy & Schmidt, 2016). Therefore, anxiety can arise as a response to the stress of an attention allocation dilemma between work and nonwork domains and by e-mail monitoring behavior (Marulanda-Carter & Jackson, 2012). The failure to achieve desired goals in one or both domains intensifies the perception of threat and, thus, feelings of anxiety. Discrete state emotions have a specific trigger, which in this case is work e-mail expectations and attention demands during nonwork time. Therefore, we refer to these OEEM-related feelings of anxiety as “*e-anxiety*” from this point forward.

Hypothesis 1: OEEM during nonwork time will be positively related to e-anxiety.

The Effects of E-anxiety on Employee Health and Marital Satisfaction

We further argue that e-anxiety is detrimental to individual well-being. We propose that OEEM can be a fundamental trigger of minor day-to-day stressors that may accumulate over a prolonged period of time (McEwen, 1998) because there is no definitive limit or resolution to the OEEM and its attention allocation dilemma. The expectation of constant availability means that one’s cognitive resources are always in the “on” mode during nonwork hours. Unlike instances when an employee can deal with work overload by investing resources to accomplish a task and then mentally and physically disengage and focus on the nonwork domain, the pervasiveness of OEEM creates a perpetual demand on attentional resources. Thus, we propose that e-anxiety exacerbates psychological and physiological distress (Krannitz, Grandey, Liu, & Almeida, 2015; Wagner, Barnes, & Scott, 2014) through constant attentional interruptions and residue, thereby negatively affecting employee well-being. Supporting this logic, several studies have documented increases in anxiety in response to task interruptions (Bailey & Konstan, 2006; Zijlstra, Roe, Leonora, & Krediet, 1999) and decreases in individual well-being (Zijlstra et al., 1999). Furthermore, there is a well-established link between anxiety and health outcomes, such as poor physical and mental health and premature mortality (e.g., Keller et al., 2012; McEwen, 2017; McEwen & Stellar, 1993; Watson & Pennebaker, 1989). Taken together, we anticipate that high OEEM will negatively affect employee health both directly and through e-anxiety.

Experiences of e-anxiety may also negatively affect, or be misattributed by, one’s significant other, leading to increases in spousal conflict and endangering one’s marriage or partnership (Ford, Heinen, & Langkamer, 2007; Kossek, Ruderman, Braddy, & Hannum, 2012). Furthermore, with high OEEM, individuals may become locked into their work domain schemas, which may not be well suited for deeply enacting their nonwork domain roles (Shumate & Fulk, 2004). For example, if one’s work requires one to be dominant and psychologically distant, enacting the role of a caring and flexible relationship partner will be difficult. As argued above, failure to enact required roles may intensify feelings of e-anxiety (Ilies, Schwind, Wagner, Johnson, DeRue, & Ilgen, 2007) and may prevent individuals from engaging in social or family interactions. Therefore, we expect employee relationship satisfaction to be hindered by OEEM both directly and indirectly through e-anxiety. Meta-analytic evidence supports this logic, demonstrating significant links between work-family conflict and relationship satisfaction and health problems (Amstad, Meier, Fasal, Elfering, & Semmer, 2011; also, for a review, see Randall & Bodenmann, 2009). We add to this literature by proposing that OEEM represents another distinct antecedent of this tension—one that creates

e-anxiety through its pervasive omnipresence, leading to employee feelings of lack of control and inability to successfully fulfill nonwork roles. Thus, ultimately, it should have detrimental effects on employee nonwork relationships and general health.

Hypothesis 2: E-anxiety will mediate the relationship between OEEM during nonwork time and (a) employee health and (b) employee relationship quality with significant others.

Crossover Within the Nonwork Domain

The attention dilemma of employee e-anxiety is likely to be observed by and directly affect significant others—known as crossover effects (Ford et al., 2007; Song, Foo, & Uy, 2008; Westman, 2001, 2005). For instance, in their study of 113 dual-earner couples, Matthews, Del Priore, Acitelli, and Barnes-Farrell (2006) found that partners accurately perceived their partner's level of work-family conflict, which also correlated positively with their own perception of conflict and relationship tension. By engaging in work-related activities while at home, employees break nonwork normative expectations and create tension for their significant other. Employee anxiety, combined with the lack of relational mindfulness in dyadic interactions due to allocating attention to the work-related domain, may lead to contagion effects whereby the employee's significant other will experience anxiety regarding the employee's electronic communication habits as well. Sensing anxiety from the employee and/or experiencing anxiety as a result of the employee's work-related attention allocation and lack of relationship engagement is likely to facilitate contagion effects, such that the employee's e-anxiety in the nonwork domain can be "caught" by the employee's significant other (Barsade, 2002; Boyar, Maertz, Pearson, & Keough, 2003). For example, the significant other may become hyperaware of anticipated interruptions and distraction of his or her partner during nonwork time. As a result, the significant other's e-anxiety should be positively related to the e-anxiety of his or her partner.

Hypothesis 3: E-anxiety will have crossover effects on the e-anxiety of significant others.

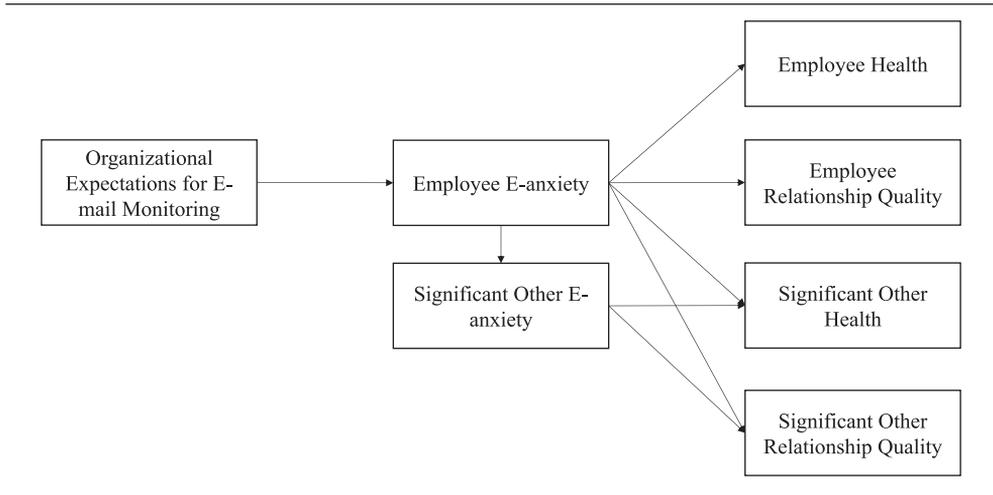
Anxiety in both partners is likely also to affect the significant other's relationship quality and health because the significant other is powerless to take direct action to resolve feelings of e-anxiety. Furthermore, indirect attempts to address the underlying issue may increase conflict within the relationship and increase stress on both individuals. Therefore, we propose that e-anxiety should have detrimental implications for the health and relationship satisfaction of both partners rather than simply the focal employee (Chesley, 2005; Ford et al., 2007). The full proposed model is presented in Figure 1.

Hypothesis 4: Employee and significant other e-anxiety will mediate the relationship between OEEM and significant other (a) health and (b) relationship quality.

Overview of the Studies

To test our hypotheses, we conducted three studies. In Study 1, we first explored the mediating process within the focal employee using an experience sampling approach. Since this study was within-person, we were unable to directly test Hypotheses 3 or 4 regarding

Figure 1
Proposed Model



crossover effects on significant others. We did, however, investigate whether OEEM and e-anxiety were related to increased conflict with significant others. In Study 2, we utilized a cross-sectional sample of employee–significant other dyads to (a) test the validity of our OEEM measure using a separate survey for participants’ managers, (b) replicate our findings from Study 1, and (c) test Hypotheses 3 and 4. In Study 3, we performed a cross-sectional validation study to validate our OEEM measure, differentiate it from technology use measures that already exist in the literature, and test our findings for Hypotheses 1 and 2 once again.¹ We acknowledge that this validation should have been performed first; however, we present the studies in chronological order to ensure research transparency.

Concerning control variables, we initially included age, gender, and time spent on electronic communications. During the review process, we adopted the guidance of Bernerth and Aguinis (2016) for control variable usage in research. While age and gender are common controls in the extant literature, we did not believe that they were theoretically integral features of our anxiety-based model. We retained time spent on electronic communications as a control because we consider it an important theoretical factor for employee resource depletion and anxiety, in addition to being a prominent feature of previous studies of technology use. We note that adding the additional control variables did not affect the relationships of interest reported here. In contrast, dropping time spent on electronic communications slightly strengthened the relationships between OEEM and other variables.

Study 1

Method

Participants and procedure. We first tested our predictions concerning employee well-being outcomes using an experience sampling study of working adults from a variety of industries and organizations in the United States. We recruited 182 evening master of business

administration students enrolled in a U.S. university and working adults from the authors' personal networks. All participants worked at least 30 hours per week. Participants were sent surveys over 4 consecutive days (Saturday and Sunday were considered as 1 day). The initial survey included demographic variables as well as the experience sampling variables, while the subsequent surveys included only experience sampling variables. The final sample included 108 individuals and 376 experience sampling measurements. The employee participants spanned a variety of industry groups, including technology (17%), health care (14%), and government (11%). The employee sample was 50% male, and the median age range reported was 31 to 35 years ($SD = 1.56$). All but 4 participants were in a committed relationship and currently living with their spouse/partner.

Measures

Individual-level variables. To create a more reliable measure of *OEEM* outside of work that specifically taps into the subjective employee perceptions regarding normative expectations, we combined the two items adapted from Venkatesh and Davis (2000) with a third item taken from Butts, Becker, and Boswell (2015). Those three items were "People who influence my behavior at work think that I should monitor electronic communications away from work," "People who are important to me at work expect me to respond to electronic communication away from work," and "In this company it is expected that people will read and act on email outside of working hours," respectively. Responses were reported on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*), with an alpha of .92.

Day-level variables. Participants were instructed to answer the daily survey at the end of each day or before the start of the next workday. Because we used a within-person design, we included a day-level variable to represent an employee's response to OEEM. Specifically, we assessed *work electronic communication monitoring frequency* during nonwork time using a single-item measure, "How frequently did you check work communications during nonwork time today?" Responses were provided on a 5-point Likert scale ranging from 1 (*never*) to 5 (*every few minutes*). *E-anxiety* was measured using a three-item scale (tense, nervous, and anxious) from the Spielberger State-Trait Anxiety Inventory (STAI) short form (Marteau & Bekker, 1992). The stem for the measure was "Please indicate the extent to which you felt the following today when you think about work-related electronic communication outside of work." Responses were reported on a 5-point Likert scale ranging from 1 (*not at all*) to 5 (*very much*). *Time spent on work-related electronic communication during nonwork time* was measured using a single-item measure, "How many minutes did you spend dealing with work-related electronic communications during nonwork time today?" Responses were on a continuous slider ranging from 0 to 240 minutes.

Health was measured using a single item (Meng, Xie, & Zhang, 2014), "Please choose one point on the 100-point scale below that best represents your overall health today," and a sliding scale with 0 being worst and 100 best. In order to assess *relationship quality* at the day level, we assessed the amount of conflict with the employee's significant other experienced by the employee that day by using a single item adapted from Barry, Willingham, and Thayer (2000): "How much conflict did you have with your significant other today?" Responses were reported on a 5-point Likert scale ranging from 1 (*none at all*) to 5 (*a great deal*). The descriptive statistics for the Study 1 variables are displayed in Table 1.

Table 1
Correlations, Means, and Standard Deviations for Study 1 Variables

Variable	1	2	3	4	5	6	<i>M</i>	<i>SD</i>
1. OEEM	(.92)	.60**	.42**	.36**	-.24*	.29**	3.17	1.22
2. Monitoring frequency	.53**		.72**	.50**	-.23*	.25*	2.18	0.99
3. Time on e-mail	.35**	.66**		.48**	-.18	.28**	35.8	45.5
4. E-anxiety	.29**	.43**	.39**	(.87)	-.30**	.25*	1.64	0.84
5. Health	-.22**	-.23**	-.20**	-.27**		-.13	77.0	14.4
6. Conflict with significant other	.23**	.20**	.16**	.18**	-.11		1.42	0.72

Note: Individual $N = 108$; Day $N = 376$. Time was coded as minutes. Correlations below the diagonal are for the raw data; correlations above the diagonal are collapsed within individuals. Coefficient alphas are provided along the diagonal; items without alpha values were single-item measures. Monitoring frequency, time on e-mail, and conflict with significant other were skewed right, while health was slightly skewed to the left. OEEM = organizational expectations for e-mail monitoring.

* $p < .05$.

** $p < .01$.

Data Analysis

All multi-item study variables had acceptable reliabilities with alphas above .80. Our experience sampling data contained a multilevel structure in which daily observations were nested within individuals. To appropriately test our hypotheses, we used multilevel modeling with hierarchical linear modeling (HLM). Our analyses included OEEM at Level 2 and daily independent and outcome variables at Level 1. OEEM was grand-mean centered, while Level 1 independent variables were group-mean centered to render cross-level variables statistically independent of each other (Enders & Tofighi, 2007). The HLM 7 (Bryk & Raudenbush, 1996) results for Study 1 are displayed in Table 2.

Results

Hypothesis 1 predicted that OEEM during nonwork time would be positively related to e-anxiety. Model 2 of Table 2 shows that the relationship between expectations and e-anxiety was significant and in the expected direction ($\beta = 0.21, p < .001$). The nature of our experience sampling data also allowed us to investigate the day-level variable of monitoring frequency. Model 2 of Table 2 shows that the relationship between fluctuations in daily monitoring frequency ($\beta = 0.23, p < .001$) was also significantly related to within-person e-anxiety. Therefore, Hypothesis 1 was supported.

Hypothesis 2 predicted that the effects of expectations on (a) health and (b) relationship quality would be mediated by indirect effects through e-anxiety. Model 3 of Table 2 indicates significant direct effects for OEEM ($\beta = -2.78, p = .002$) and within-person e-anxiety ($\beta = -2.66, p = .013$) with health. We tested the indirect effect of OEEM and monitoring frequency on health with Tofighi and MacKinnon's (2011) distribution-of-products method using RMediation. We first tested the 2-1-1 indirect effect of OEEM and found that it was significant, yielding a 95% confidence interval (CI) of -1.07 to -0.18 . We also found that the indirect effect of monitoring frequency through e-anxiety was significant (95% CI = $[-1.17,$

Table 2
Hierarchical Linear Modeling Results for Study 1

Variable	Monitoring	E-anxiety	Health	Conflict
	Model 1	Model 2	Model 3	Model 4
Intercept (b_{00})	2.21 (0.07, < .001)	1.67 (0.06, < .001)	77.0 (1.2, < .001)	1.44 (0.05, < .001)
Level 2				
OEEM (b_{02})	0.42 (0.06, < .001)	0.21 (0.05, < .001)	-2.78 (0.89, .002)	0.15 (0.04, .001)
Level 1				
Monitoring frequency (b_{10})		0.23 (0.06, < .001)	-0.21 (1.28, .873)	0.09 (0.09, .307)
Time spent on e-mail (b_{20})		0.00 (0.00, .585)	-0.03 (0.02, .092)	-0.00 (0.00, .140)
E-anxiety (b_{30})			-2.66 (1.05, .013)	0.16 (0.07, .030)
ICC	.31	.56	.71	.40
Pseudo R^2	.39	.49	.35	.18

Note: Individual $N = 108$; Day $N = 376$. Standard errors and p values are shown in parentheses. The intraclass correlation coefficient (ICC) is the proportion of variance in the dependent variable that is between individuals for the null model. The pseudo R^2 is the percentage reduction in Level 1 variance between the null and full models (Bryk & Raudenbush, 1996). OEEM = organizational expectations for e-mail monitoring.

-0.17]); that is, using monitoring frequency as a day-level measure of OEEM, we found that it was negatively related to individual health through e-anxiety. Therefore, Hypothesis 2a was supported. It is also worth noting that given the direct effect of OEEM, the total effect of OEEM on health was substantial.

For Hypothesis 2b, we measured daily conflict with a significant other as a day-level measure of relationship quality. Model 4 of Table 2 found significant direct effects for OEEM ($\beta = 0.15, p = .001$) and e-anxiety ($\beta = 0.16, p = .030$) with significant other relationship conflict. RMediation indicated that the indirect effects of both OEEM (95% CI = [0.01, 0.06]) and within-person monitoring frequency (95% CI = [0.01, 0.07]) on daily conflict with significant other through e-anxiety were significant. As a result, Hypothesis 2b was also supported. Once again, the total negative effect of expectations on relationship quality was quite strong.

Study 1 Discussion

Study 1 provides strong initial support for our predicted relationships between OEEM and feelings of e-anxiety and employee well-being. The strength of this study lies in the ability of experience sampling to demonstrate these effects within individual employees over a short period of time. The findings suggest not only that the omnipresent specter of OEEM has a consistent negative effect on well-being but also that daily fluctuations in monitoring and anxiety significantly influence well-being and personal relationship quality. However, Study 1 was not well suited to directly test our predictions of crossover effects between employees and their significant others; thus, we conducted another study to replicate our initial findings and test our remaining research questions.

Study 2

Study 2 had three main goals: (1) to confirm the between-person effects of OEEM on employee e-anxiety, general health, and relationship satisfaction observed in Study 1 with a new sample of employees; (2) to examine the potential crossover effects of employees' e-anxiety on their spouses' anxiety and well-being; and (3) to validate the subjective employee e-mail-related expectations construct by collecting the data from employees' managers with respect to OEEM.

Method

Participants and procedure. We tested our predictions using a sample of working adults from a variety of industries and organizations. We recruited participants from master of business administration students, the authors' professional networks, and the alumni networks of three U.S. universities located in different parts of the country. This was advantageous because our sample included employees who were very similar to Study 1 as well as others who were not currently part-time students. Using a combination of direct e-mail invitations and requests through alumni newsletters, we received 639 responses to our employee survey. Participants were asked to provide contact information for their significant other and a manager in their organization. Of the total, 228 provided a significant other e-mail, while 252 provided a manager e-mail. We then sent e-mail invitations for separate significant other and manager surveys. In response, we received 138 complete significant other surveys and 105 manager surveys. The employee participants spanned a large variety of industry groups, including technology (20%), education (15%), government (11%), finance and banking (10%), and health care (8%). The employee sample was 59% male, and the median age range reported was 36 to 40 years ($SD = 2.14$).

Measures

Employee variables. OEEM, e-anxiety, and health were measured with the same items as Study 1. Responses were reported on a 5-point Likert scale ranging from 1 (*not at all*) to 5 (*very much*). Relationship quality was measured on a three-item relationship satisfaction scale from Kacmar, Crawford, Carlson, Ferguson, and Whitten (2014) using the same Likert agreement scale. A sample item is "All in all, I am satisfied with my marriage/personal relationship." Time spent on work electronic communications during nonwork time was measured using the same measure from Study 1 except that employees reported the number of hours spent in a typical week.

Significant other variables. In the significant other survey, we used the same response scales but modified the stems and items from the employee surveys as follows. We asked significant others to report their own e-anxiety over their partner's use of work electronic communications. We used the same stems and items to have the significant others report their own relationship quality perception and health.

Managerial expectations. We used the manager surveys to investigate whether employees' perceptions of OEEM were consistent with those of their supervisors, who may be creating such expectations, both intentionally and unintentionally. We used the same scale that was

Table 3
Correlations, Means, and Standard Deviations for Study 2 Variables

Variable	1	2	3	4	5	6	7	8	<i>M</i>	<i>SD</i>
1. Time on e-mail									7.21	7.26
2. OEEM	.23**	(.87)							3.26	1.04
3. E-anxiety	.08	.29**	(.88)						2.41	0.95
4. Relationship satisfaction	-.06	.01	.10	(.85)					4.40	0.63
5. Health	-.08	-.14	-.23**	.19*					78.0	15.5
6. SO e-anxiety	.19*	.16	.29**	.04	-.19*	(.91)			1.81	0.92
7. SO relationship satisfaction	.05	-.02	-.21*	.10	.11	-.23**	(.91)		4.16	0.88
8. SO health	-.03	.04	-.02	.01	.09	-.19*	.34**		78.1	10.8

Note: $N = 138$. Coefficient alphas are provided along the diagonal. Time was coded as hours. OEEM = organizational expectations for e-mail monitoring; SO = significant other.

* $p < .05$.

** $p < .01$.

provided for employees to measure OEEM and then matched employee-manager dyads for our analyses.

The descriptive statistics for the Study 2 variables are displayed in Table 3.

Data Analysis

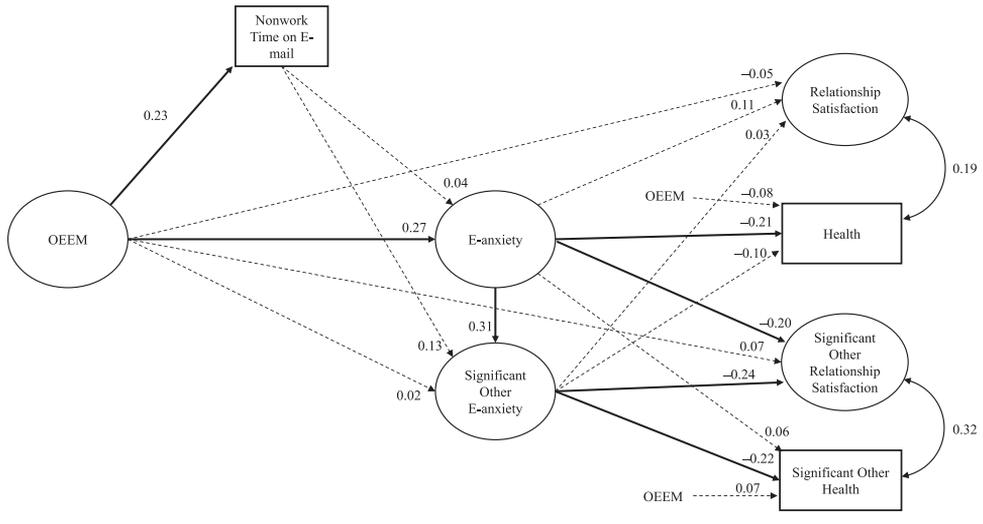
All study variables had coefficient alpha reliabilities over .80. We conducted a confirmatory factor analysis of the employee responses to ensure a good fitting measurement model using Mplus Version 7.4 (Muthén & Muthén, 2015). The three-factor measurement model for employees fit the data well: root mean square error of approximation (RMSEA) = .05, comparative fit index (CFI) = .99, $\chi^2(24) = 33$. We compared our three-factor model with the fit of the best fitting two-factor model (loading anxiety and relationship satisfaction on a single factor) and found the two-factor model fit was significantly worse (RMSEA = .22, CFI = .67, $\Delta\chi^2(2) = 205$, $p < .01$). A single-factor measurement model did not fit the data well (RMSEA = .31, CFI = .41, $\Delta\chi^2(3) = 368$, $p < .01$). This analysis suggests that our measurement model was appropriate.

For the 105 employees with a manager response, we found that the correlation between employee and manager ratings of OEEM was positive and significant ($r = .44$, $p < .01$). This suggests that our measure was an accurate reflection of OEEM outside of working hours. Our data contained multiple predictor and outcome variables with indirect effects through mediating variables. To simultaneously test all of our predicted direct and indirect effects, we used path modeling again using Mplus. We used path modeling to be consistent with guidance for analyzing actor-partner interdependence models (Fitzpatrick, Gareau, Lafontaine, & Gaudreau, 2016). Maximum likelihood estimation was used for the analyses. All hypothesized model paths were estimated. Figure 2 provides the standardized path coefficients for all significant paths of this model.

Results

Hypothesis 1 predicted that OEEM during nonwork time would be positively related to anxiety over work electronic communications. Table 3 shows that the correlation between

Figure 2
Organizational Expectations for E-mail Monitoring–Triggered Spillover Results
Between Employee and Significant Other for Study 2



Note: $N = 134$. Solid paths are significant (at $p < .05$). OEEM = organizational expectations for e-mail monitoring.

OEEM and e-anxiety ($r = .29, p < .01$) was significant and in the expected direction. Figure 2 and Table 4, which shows the path model results for Study 2, show that the modeled path between OEEM and e-anxiety ($\beta = 0.27, p = .001$) was also significant. Therefore, Hypothesis 1 was supported.

Hypothesis 2 predicted that the effects of OEEM on (a) health and (b) relationship satisfaction would be mediated by indirect effects through e-anxiety. Table 4 indicates significant direct effects between e-anxiety and health ($\beta = -0.21, p = .017$) but not for relationship satisfaction. We tested this indirect effect using bootstrap methods and found that the indirect effect of expectations on health through e-anxiety was significant (95% CI = $[-0.15, -0.01]$). Therefore, Hypothesis 2a was supported, but Hypothesis 2b was not.

Regarding crossover effects on the significant other, Hypothesis 3 predicted that employee e-anxiety would mediate the effects of OEEM on significant other e-anxiety. Table 4 indicates a significant direct effect between employee and significant other e-anxiety ($\beta = 0.31, p < .001$). Bootstrap methods showed that the indirect effect of expectations through employee e-anxiety was significant (95% CI = $[0.02, 0.18]$). Therefore, Hypothesis 3 was supported. Hypothesis 4 predicted that the effects of expectations on significant other (a) relationship satisfaction and (b) health would be mediated by indirect effects through employee e-anxiety and significant other e-anxiety. As seen in Figure 2, significant other relationship satisfaction had significant direct relationships with employee e-anxiety ($\beta = -0.20, p = .020$) and significant other e-anxiety ($\beta = -0.24, p = .005$). There was also a significant relationship between significant other e-anxiety and health ($\beta = -0.22, p = .014$). Our model provided multiple indirect paths between expectations and significant other outcomes. For significant

Table 4
Path Model Results for Study 2

Variable	Time	E-anxiety	SO E-anxiety	Relationship Satisfaction	Health	SO Relationship Satisfaction	SO Health
OEEM	0.23 (0.08, .005)	0.27 (0.08, .001)	0.02 (0.09, .810)	-0.05 (0.09, .558)	-0.06 (0.09, .488)	0.04 (0.09, .604)	0.08 (0.09, .359)
Time		0.04 (0.08, .638)	0.13 (0.08, .111)	0.00 (0.09, .974)	-0.07 (0.08, .412)	0.13 (0.08, .130)	-0.04 (0.09, .617)
E-anxiety			0.31 (0.08, < .001)	0.11 (0.09, .231)	-0.21 (0.09, .017)	-0.20 (0.09, .020)	0.06 (0.09, .497)
SO e-anxiety	.05	.08	.13	0.03 (0.09, .758)	-0.09 (0.09, .317)	-0.24 (0.08, .005)	-0.22 (0.09, .014)
R ²				.01	.09	.12	.05

Note: Individual $N = 138$. Standard errors and p values are shown in parentheses. SO = significant other; OEEM = organizational expectations for e-mail monitoring.

other relationship satisfaction, we saw a significant indirect path from expectations to employee e-anxiety to significant other relationship satisfaction (95% CI = $[-0.14, -0.01]$), as well as a significant indirect path through significant other e-anxiety (95% CI = $[-0.06, -0.003]$). For significant other health, the indirect effect of expectations through employee and significant other e-anxiety was also significant (95% CI = $[-0.06, -0.003]$). The upper bounds of these CIs are very close to 0, so the indirect effects are quite weak. Overall, Hypotheses 4a and 4b were supported.

Study 2 Discussion

Study 2 largely confirmed the findings of Study 1 that higher OEEM was negatively related to employee well-being. It also indicated that employee perceptions of OEEM were consistent with the perceptions and expectations of their supervisors. We also found support for the crossover effects of OEEM to significant others. While this support was tempered somewhat by a lack of direct relationships between OEEM and significant other variables, the indirect effects through e-anxiety were quite strong. Lastly, we did not find effects for employee relationship satisfaction, which may be because the sample included only employees who were willing to share their significant other's contact information. Nonetheless, it is notable that we still did find negative relationships with significant others' relationship satisfaction.

Study 3

Study 3 had four main goals related to concerns that arose during the review process: (1) to validate our measure of OEEM and replicate findings for Hypotheses 1 and 2, (2) to differentiate OEEM from prior technology use measures, (3) to differentiate our measure of e-anxiety from general anxiety, and (4) to explore additional potential control variables.

Method

Participants and procedure. We collected additional data to assess the validity of our OEEM construct relative to other e-mail usage and job demands constructs using a panel of full-time working adults via the Cloud Research online platform (Litman, Robinson, & Abberbock, 2017). Participants were 45% female and had a median age range of 36 to 40 years ($SD = 1.66$). Of the sample, 71% were either married or living with a significant other, and participants had an average tenure at their organization of 6 years ($SD = 6.03$).

We utilized a two-wave design with dependent variables collected at Time 2, approximately 1 week after the initial survey. For the initial survey, we obtained two different samples ($N_{\text{Sample 1}} = 150$; $N_{\text{Sample 2}} = 120$), with the second sample refined to include only full-time employees who receive work-related e-mail from their company (e.g., boss, peers, subordinates) outside of working hours. After eliminating respondents who failed to correctly respond to one or more of our attention check questions and after dropping those respondents from the first sample who did not use the e-mail outside of working hours, we invited a total of 209 people from both samples ($N_{\text{Sample 1}} = 104$; $N_{\text{Sample 2}} = 105$) to participate in the follow-up survey. In total, 178 people filled out the follow-up survey. Again, after we checked for missing data and failed attention check questions in the follow-up survey, the final sample included 162 respondents.

Measures

OEEM and *e-anxiety* were measured at Time 1. *Relationship quality* and *health* were measured at Time 2. These measures were the same as in Study 2. *General anxiety* was measured using the three-item scale (tense, nervous, or anxious) from the STAI short form (Marteau & Bekker, 1992). The question for general anxiety was changed to “How much do you feel the following in general outside of work?” Below, we describe additional measures that were added for Study 3.

Other OEEM-related measures at Time 1. *Work-related cell phone use* was measured with the five items from Ragsdale and Hoover (2016). A sample item is “I perform job-related tasks at home at night or on weekends using my cell phone or computer.” *Work-related smartphone use* was measured using the four-item scale from Derks and Bakker (2014). A sample item is “Today, I used my smartphone intensively during after work hours for work-related purposes.” *Work e-mail centrality* was measured with the four items from Dabbish and Kraut (2006). A sample item is “Email is critical for getting my work done.” All responses were reported on a 5-point Likert scale ranging from 1 (*not at all*) to 5 (*very much*).

Related job demand variables at Time 1. We chose two related job demand measures. *Emotional load* was measured with seven items. A sample item is “My work demands a lot from me emotionally.” *Mental load* was measured with eight items. A sample item is “I have to give continuous attention to my work.” All of these items were taken from Van Veldhoven and Meijman (1994), as utilized by Schaufeli and Bakker (2004).

Control variables. We included and explored several additional control variables (to those used in Studies 1 and 2) that might be expected to influence OEEM at the request of the review team and because they were included in previous studies. These included *flexible scheduling*, *telecommuting*, *hierarchical level* (manager or executive), and the *number of dependents* respondents had (Carlson, Grzywacz, & Kacmar, 2010; Gajendran & Harrison, 2007; Golden, Viega, & Simsek, 2006).

The descriptive statistics for the Study 3 variables are displayed in Table 5.

Data Analysis

In keeping with the guidance of Hinkin (1998), we first ran exploratory factor analysis (EFA) of the OEEM items with the related electronic communications measure items using only Sample 1 using SPSS Version 26. We conducted principal component extraction with varimax rotation. Next, we conducted a confirmatory factor analysis of the OEEM items relative to the other measures using only Sample 2 with Mplus Version 7.4 (Muthén & Muthén, 2015). Finally, we used structural equation modeling (SEM) in Mplus to replicate some of our previous findings and test the impact of other potential control variables. Maximum likelihood estimation was used, and all potential relationships were estimated. There were no missing data.

Results

The rotated solution indicated that the OEEM items loaded on a single factor (.86–.91) and did not have significant cross-loading on any other factors. This EFA also suggested that

Table 5
Correlations, Means, and Standard Deviations for Study 3 Variables

Variable	1	2	3	4	5	6	7	8	9	10	<i>M</i>	<i>SD</i>
1. OEEM	(.91)										3.59	1.01
2. Cell phone use	.53**	(.80)									3.60	0.80
3. Smartphone use	.37**	.37**	(.68)								3.20	0.86
4. E-mail centrality	.38**	.44**	.34**	(.82)							3.93	0.83
5. Emotional load	.22*	.18*	.21**	.20**	(.72)						3.07	0.63
6. Mental load	.33**	.37**	.17*	.36**	.49**	(.83)					3.43	0.69
7. E-anxiety	.26**	.17*	.20*	.23**	.27**	.37**	(.89)				2.23	1.04
8. General anxiety	.10	.11	.16*	.10	.12	.25**	.47**	(.89)			1.98	0.95
9. Relationship satisfaction	-.18*	-.15	-.22**	-.03	-.09	-.21**	-.15	-.30**	(.93)		3.93	0.96
10. Health	-.05	-.06	-.17*	-.09	-.15	-.27**	-.23**	-.32**	.29**		77.4	14.5

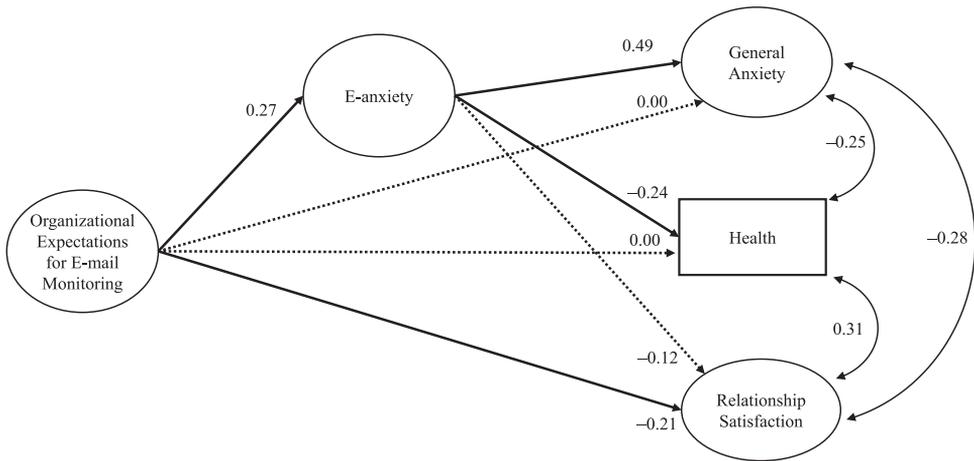
Note: *N* = 162. Coefficient alphas are provided along the diagonal. OEEM = organizational expectations for e-mail monitoring.
 **p* < .05.
 ***p* < .01.

the other measures had subdimensions (frequency of use, time, usefulness, etc.), item cross-loading, and poor performing items. The results suggested that only two of the *work-related smartphone use* items loaded together. We then performed an EFA on the OEEM and job demand items. Once again, the results indicated that the OEEM items loaded on a single factor (.83–.86), while the job demand items formed several subdimensions of emotional and mental load. In summary, the EFA results indicated that the three OEEM items performed well and consistently loaded on a single factor that was distinct from other related factors.

On the basis of the EFA results, we dropped the smartphone use items and poor performing items of the cell phone use and e-mail centrality scales. The resulting three-factor measurement model for OEEM and the electronic communications measures suggested by the EFA fit the data well (RMSEA = .08, CFI = .97, $\chi^2(32) = 49$). We compared our three-factor model fit with the best fitting two-factor model (loading OEEM and cell phone use on a single factor) and found the two-factor model fit significantly worse ($\Delta\chi^2(2) = 54, p < .01$). A single-factor measurement model did not fit the data well (RMSEA = .27, CFI = .60, $\Delta\chi^2(3) = 201, p < .01$). We repeated this process for the job demand items and found similar results. In addition, SEM results using the Sample 2 data indicated that e-anxiety was positively related to OEEM but not to cell phone use, e-mail centrality, or emotional or mental load demands. Our analysis suggests that our OEEM construct was distinct from related electronic communications measures and job demand measures.

For our SEM analysis, we included *general anxiety* at Time 2 as a dependent variable to investigate whether e-anxiety was distinct from general anxiety. We first investigated the potential control variables. None of the controls were correlated with OEEM or e-mail-related anxiety. When they were included in the SEM analysis, *telecommuting* was negatively related to *health*, and *number of dependents* was positively related to *relationship satisfaction*. The controls had no effect on the relationships of interest, so we left them out of

Figure 3
Organizational Expectations for E-mail Monitoring Validation Results for Study 3



Note: $N = 162$. Only significant paths are shown (comparative fit index = .998; root mean square error of approximation = .02). Solid paths are significant (at $p < .05$).

the final model. Figure 3 provides the standardized path coefficients for all significant paths of this final model.

Hypothesis 1 predicted that OEEM during nonwork time would be positively related to e-anxiety. Figure 3 and Table 6, which displays the SEM results for Study 3, show that the modeled path between OEEM and e-anxiety ($\beta = 0.27, p = .001$) was significant in the expected direction. Therefore, Hypothesis 1 was supported. Hypothesis 2 predicted that the effects of expectations on (a) health and (b) relationship satisfaction would be mediated by indirect effects through e-anxiety. Table 6 indicates significant direct effects between e-anxiety and health ($\beta = -0.24, p = .004$). The bootstrap test found that the indirect effect of expectations on health through e-anxiety was significant (95% CI = $[-0.14, -0.02]$). As before, there was no significant relationship between e-anxiety and relationship satisfaction, but as indicated in Figure 3, we found a significant negative relationship between OEEM and relationship satisfaction ($\beta = -0.21, p = .011$). Once again, Hypothesis 2a was supported, but Hypothesis 2b was not. The results for general anxiety indicated that e-anxiety was positively related to subsequent general anxiety ($\beta = 0.49, p < .001$) and that there was a positive indirect effect of OEEM on general anxiety (95% CI = $[0.06, 0.24]$).

Study 3 Discussion

Study 3 provides additional evidence that our OEEM measure reliably taps into a job-related stressor that is distinct from previous electronic communication and job demand measures. Moreover, our results suggest the value of adopting a more specific approach to assessing employee job demands, rather than general measures that tap into overall emotional or mental load. Furthermore, the results confirmed the findings of Studies 1 and 2 that higher OEEM was negatively related to employee well-being. This study also provides

Table 6
Structural Equation Modeling Results for Study 3

Variable	E-anxiety	Relationship Satisfaction	Health	General Anxiety
OEEM	0.27 (0.08, .001)	-0.21 (0.08, .011)	-0.00 (0.08, .983)	-0.00 (0.08, .970)
E-anxiety		-0.12 (0.08, .160)	-0.24 (0.08, .004)	0.49 (0.07, < .001)
R ²	.07	.07	.06	.24

Note: Individual $N = 162$. Standard errors and p values are shown in parentheses. OEEM = organizational expectations for e-mail monitoring.

additional evidence that OEEM represents a distinct source of employee anxiety (“e-anxiety”) that adds to employee general anxiety and negatively affects relationship quality and health.

General Discussion

Electronic communication has proved to be a revolutionary tool for the workplace. In many ways, it is a valuable tool when used appropriately (e.g., Demerouti et al., 2014; Hill, Kang, & Seo, 2014), allowing employees more flexibility in where and when they work. Yet there are also negative implications. Applying tenets from the JD-R model (Bakker & Demerouti, 2007; Demerouti, et al., 2001), this research exposed how competing demands of work and nonwork lives created by OEEM present a pervasive attention allocation dilemma for employees in which feelings of e-anxiety are triggered that negatively affect personal well-being and relationship quality. By integrating research on attention residue (Leroy, 2009; Leroy & Glomb, 2018; Leroy & Schmidt, 2016) with the literature on stress and anxiety, our study is one of the first to explain why OEEM is an ominous modern-day job stressor and exposes e-anxiety as a mediating mechanism.

Across three studies with different samples of working adults we (1) documented specific negative effects of OEEM on employee levels of anxiety and health using an experience sampling approach (Study 1), (2) established OEEM as an objective (e.g., managerial survey in Study 2) and distinct measure of job stress and an antecedent of employee e-anxiety (Studies 2 and 3), and (3) replicated and extended findings on the effects of OEEM-induced anxiety on employee health (Studies 2 and 3), while also demonstrating relationships between employee e-anxiety and significant other’s anxiety, health, and relationship satisfaction (Study 2). Our results suggest key implications in three areas.

Implications for Resource-Based Theories of Stress

Extending models on job-related stressors, we tested and validated OEEM as a significant psychological stressor in employee daily life. Specifically, our findings support the value of taking a nuanced approach to investigate sources of employee demands and stress. While nascent research has established increased job demands pressure due to mobile technology that crosses traditional work-family boundaries (i.e., the mWork phenomenon; Ferguson et al., 2016), we show that monitoring expectations are particularly damaging because they have no finite boundaries. Thus, we add to the literature by showing the value of being more

specific, rather than general, in examining antecedents and outcomes of job demands, especially for complex issues like technology.

In addition, our findings provide robust evidence for the validity of our OEEM measure. The literature studying the effects of OEEM on organizational and personal outcomes is still scarce (e.g., Belkin et al. 2016; Butts et al., 2015; Piszczek, 2017); however, it is a growing area of interest among both scholars and practitioners. Establishing a measure that can be used by future researchers can create more replicability and consistency in the literature. Here, we develop a specific measure of OEEM and differentiate it from previously established related measures. For instance, all of the alternative measures in Study 3 contained subdimensions, which limit their ability to detect more subtle effects. We also demonstrate that our measure is related to actual organizational expectations and employee monitoring behavior. As a result, this measure can be used by academics and practitioners to further understand this phenomenon and develop and test interventions to mitigate its detrimental effects.

Implications for Literature on Electronic Communication

By showing the role of e-anxiety, rather than general anxiety, in the adverse outcomes of OEEM, we provide better insight into one of the psychological mechanisms for negative employee and significant other well-being outcomes. While recent studies within the organizational domain have demonstrated that anxiety is related to reduced job performance (McCarthy, Trougakos, & Cheng, 2016), decreased job satisfaction, job withdrawal (Boyd, Lewin, & Sager, 2009), and increased unethical behavior (Kouchaki & Desai, 2015), the extent to which *e-anxiety* may affect employee and family well-being has not been explored. Our findings identify e-anxiety as a mediator in the relationship between expectations and well-being outcomes. This finding is important for two reasons: (1) it suggests the possibility that the dysfunction of expectations could be managed by considering how such e-anxiety could be mitigated, and (2) it provides a platform for exploring potential moderators, possibly borrowing from the emotion regulation literature, in the relationship between OEEM and e-anxiety.

For instance, our findings for e-anxiety and subsequent negative relationships with employee well-being suggest that OEEM may advance the work domain at the expense of nonwork relationships. That is, employees are putting themselves into a work mind-set during nonwork hours and experiencing e-anxiety. This e-anxiety can spill over to significant others and when coupled with poor relational mindfulness and impaired nonwork role fulfillment, lead to a vicious downward cycle. Accordingly, scholars may also consider questions about the pervasiveness of dysfunctional emotion strategies, such as self-blame or rumination that are associated with greater emotional vulnerability and depressive symptoms (Garnefski, Kraaij, & Spinhoven, 2001), as a result of an OEEM-triggered resource allocation dilemma. Does the fact that OEEM is “always present” reinforce negative emotion cycles in the focal employee? Does this increase blame on the employee’s significant other or the organization and, thus, further deteriorate relationship satisfaction and well-being? We believe these and other related questions are important avenues for future research.

Implications for Work-Family Interface Literature

Framing OEEM as a trigger of a persistent attention allocation dilemma also opens the conversation not only on how work norms in modern society alter work-nonwork boundaries

but also on how individuals must deal with these expectations over time. By applying the research on interruptions and attention residue literature (Jett & George, 2003; Leroy, 2009; Leroy & Glomb, 2018; Leroy & Schmidt, 2016), our study highlights the role of OEEM as a unique job stressor that does not have a finite ending and is ever present. This is in contrast with prior research that accounted for fixed duration of work and family role conflict when someone may bring their work home to finish up tasks or leave work for some time to finish nonwork-related tasks (e.g., Bakker & Demerouti, 2007). The negative effects of frequent microtransitions between work and nonwork roles have been suggested theoretically (Ashforth, 2001; Ashforth, Kreiner, & Fugate, 2000). Our paper, however, is one of the first to attempt to conceptually ground this idea in the cognitive load and interruptions research and to suggest a quantitative approach to the consequences of frequent microtransitions. An important insight from our research, thus, is that work overload with clear boundaries between work and nonwork domains may not be as damaging if we can afford some sense of predictability and control to an employee. For instance, as we elaborated earlier, the fact that employee marital satisfaction was not affected by OEEM in our study may indicate that employees are trying to separate work and work-related anxiety from spillover to nonwork domains. However, at the same time, the negative impact of OEEM on employee health may be a worrisome indicator that boundary permeability still takes its toll. Our findings imply that in modern work environments with “flexible” boundaries, e-anxiety is a response to this lack of control. The fact that both employees and their significant others experience e-anxiety signifies a clear conflict between employee work and family life boundaries.

Our results also highlight the need for scholars working in the work-family interface to systematically account for the role of OEEM on employee and significant other health. Our study is one of the first to use a health measure that has been tied to objective health outcomes, including hospitalization, chronic disease, and mortality (DeSalvo, Bloser, Reynolds, He, & Muntner, 2006; Meng et al., 2014; Strawbridge & Wallhagen, 1999). The findings from this research suggest that OEEM can have a detrimental effect on the health of employees and their families. It may not “feel” to the employee that he or she is headed toward illness due to OEEM, but over time, our results suggest that this may occur. This is also true for employees’ significant others. Even though our findings indicate only a weak relationship between OEEM, employee anxiety, and significant other’s health, the strong relationship between employee and significant other e-anxiety, as well as the negative impact of those variables on marital satisfaction, could be an early sign of OEEM’s potentially negative effects. These effects can eventually lead to more damaging outcomes that may spill over to significant others as well.

Practical Implications

Certainly, organizations should take the issues we highlight in this work seriously because negative health outcomes are costly to organizations (Darr & Johns, 2008; Goetzel et al., 1998; Spector & Jex, 1991). Prior work has suggested many possible interventions to address these issues, including having “no e-mail” policies at certain times of day and limiting hours when employees are allowed to respond to electronic communication (Belkin et al., 2016; Piszczek, 2017).

Our research suggests that OEEM arises out of a normative process that is driven by the behavior of supervisors and peers. As such, policies are a good start but are likely to have

little effect and may even be detrimental if they are not carefully enforced (Perrigino, Dunford, & Wilson, 2018) and emulated by organizational leaders. Ultimately, mitigating the negative effects of OEEM will require a concerted effort by organizational leaders to establish a culture of disengagement from work that fits their organization. One such approach would be targeting boundary management and setting clear boundaries on when electronic communication is acceptable even if some nonwork time engagement is required. For example, organizations could set off-hour e-mail windows and limit the use of electronic communications outside of those windows or set up e-mail schedules when various employees are available to monitor and respond. The basic idea would be to create clear boundaries for employees that indicate the times when one's work role identity enactment is likely to be needed and times when employees can focus solely on their nonwork role identities.

Additionally, organizational expectations should be communicated clearly. If the nature of a job requires e-mail availability, such expectations should be stated formally as a part of job responsibilities. Putting these expectations up front may not only reduce anxiety in focal employees but also increase understanding from significant others by reframing boundaries and expectations around employee nonwork time. For example, research indicates that when employees are allowed to engage in part-time telecommuting practices, they experience less emotional exhaustion (Windeler, Chudoba, & Sundrup, 2017) and decreased work-family conflict (Golden et al., 2006). Moreover, having a "family-supportive" supervisor that is willing to accommodate flexible schedules both formally and informally has been shown to significantly reduce perceptions of work-family conflict for the focal employee and his or her significant other (Breugh & Frye, 2008).

Limitations and Future Directions

Our research points to some promising areas for future research. While we were able to test some of our hypotheses across multiple study designs, our testing of crossover effects was limited to Study 2. This study demonstrated that e-anxiety could "cross over" to partners and ultimately hinder significant other health and relationship quality. We did not find direct effects between OEEM and significant other outcomes, suggesting that the e-anxiety of the employee is a crucial factor in these effects. Still, further research exploring crossover effects related to OEEM would increase confidence in the inferences that can be taken by these findings. Relatedly, only Study 1 of the three studies found that employee e-anxiety was negatively related to employee perceptions of relationship quality. This may mean that employees who try to compartmentalize their e-mail-related anxiety may be less aware of the detrimental effects on their relationship quality. There is a need for additional research on this topic to tease out the nuance of OEEM's effects on employee perceptions of relationship quality. Such research could help employees to improve their management of e-anxiety and, in turn, help with the management of crossover effects.

In addition to the suggestions provided above, some important issues associated with OEEM and resource allocation dilemmas that informed our theorizing should be explored further by future studies. First, we proposed OEEM to be a job demand that derives from a normative expectation. While we demonstrated that our measure of OEEM was consistent with managerial expectations and actual monitoring behavior, none of our three studies were capable of exploring the true normative nature of OEEM. A future study that samples multiple

workgroups and organizational members would be able to assess the degree of agreement and conformance with OEEM. Second, while we did not measure resource allocation dilemmas directly, our theoretical explanation and findings point to the detrimental effects of this dilemma on employee anxiety associated with electronic communication and fulfillment of nonwork roles. Perhaps future work should focus more on direct measures, such as the frequency of employee transitions between these two domains. We attempted to address this issue by including monitoring frequency in Study 1. Still, it is possible that some employees experienced e-anxiety as a result of lack of compliance with high expectations. Future work into the importance of role identities and the transition costs of role switching would move this work forward.

Additionally, to better understand the adverse effects of OEEM and inform potential interventions to mitigate those effects, future research should employ more longitudinal research methods in addition to experience sampling and cross-sectional data. Even though cross-sectional methods can be useful for establishing causality and ruling out alternative explanations (Spector, 2019), longitudinal research design can offer unique benefits. For instance, our research indicates that there is the possibility of long-term health effects as a result of electronic communication expectations. Therefore, measuring actual health outcomes, such as blood pressure or cardiovascular response to stress, in conjunction with self-reports may yield further insights into the impact of OEEM and e-anxiety on employees' and their families' well-being. Moreover, documenting daily fluctuations in employee affective responses of work to nonwork behavior using more longitudinal experience sampling method studies will provide further insights on the impact of OEEM and the ways to minimize or buffer negative effects through intervention studies.

Conclusion

Electronic communication is here to stay, and the implications of this technological advancement for employees must be fully understood. Our research points to the insidious side of high OEEM, which may be, at least partially, to blame for the national epidemic of stress and anxiety. In particular, such norms affect more than the worker; they also have crossover effects on family members and create negative outcomes in the personal domain. Employees today must navigate more complex boundaries between work and family than ever before. OEEM during nonwork hours appears to increase this burden as employees feel an obligation to shift roles throughout their nonwork time. Efforts to manage these expectations are more important than ever, especially in the light of our findings that employees' families are also affected by these expectations.

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Note

1. During the review process, anonymous reviewers astutely requested that we do this to ensure the robustness of our OEEM measure.

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