THESIS

SUPERVISOR TELEPRESSURE AND WORK-FAMILY CONFLICT: THE MODERATING ROLE OF MEANINGFUL WORK

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ABSTRACT

SUPERVISOR TELEPRESSURE AND WORK-FAMILY CONFLICT: THE MODERATING ROLE OF MEANINGFUL WORK

Workplace telepressure, the preoccupation and urge to respond to incoming work-related messages, is an emerging construct in the organizational science literature. Relatively few studies have examined antecedents and outcomes of telepressure, in addition to conditions under which experiences of telepressure may be intensified. Using a cross-sectional sample, the present study evaluates supervisor experiences of telepressure, drawing on Kahn and Byosiere's (1992) elaboration of the Institute for Social Research (ISR) model of occupational stress. Specifically, telepressure is tested as a mediator of the hypothesized positive relationship between organizational after-hours response expectations and work-to-family conflict. Additionally, I propose that the meaningfulness of one's work may actually heighten feelings of telepressure. Therefore, this study also considers the potential "dark side" of meaningful work, and tests it as a moderator of the organizational after-hours response expectations–telepressure relationship. Results demonstrate support for three of the four hypotheses. Specifically, organizational response expectations positively related to feelings of telepressure, telepressure also positively related to all three dimensions of work-to-family conflict (i.e., time-based, strain-based, and behavior-based), and finally, telepressure mediated the relationship between response expectations and work-to-family conflict. This study did not find support for the moderating role of meaningful work. Theoretical and practical implications of this work are discussed.

TABLE OF CONTENTS

Introduction

Stress is a national problem, with 78% of adults in the U.S. reporting experiencing at least one symptom of stress during the past month (e.g., anxiety, muscular tension, rapid heartbeat; APA, 2016). Occupational factors are a notable source of such stress, with two-thirds of employees viewing their job as the primary stressor in their lives (APA, 2008). In recent years, increased globalization and advances in information communication technology (ICT) (e.g., smartphones, wearable technology) have contributed to stressors in the workplace, with 18% of Americans indicating that ICTs are a significant source of stress in their life (APA, 2017). These new technologies have created a more portable work environment, allowing for constant communication and a move toward a 24/7 economy, resulting in a "new night shift" (e.g., Nijp, Beckers, van de Voorde, Geurts, & Kompier, 2016; Stone, 2014). The new night shift refers to employees with standard working hours engaging in work-related electronic communication after hours outside of the office (Stone, 2014).

These current work trends are a result of technological advances in the last few decades. As workplaces became more dependent on computers and the Internet, flexible work arrangements and telecommuting saw a surge during the 1990s, a trajectory that has continued to this day (International Telework Association and Council, 2000), with 40% more US employers offering flexible work arrangements in 2017 than in 2012 (Global Workplace Analytics, 2017). Moreover, virtual communication has become nearly ubiquitous in organizations, with 96% of employees using the Internet, e-mail, or cell phones at work, and nearly 35% of business professionals in the U.S. reporting performing at least some of their work at home in 2015 (BLS, 2015; Boswell & Olson-Buchanan, 2007; Matzat, 2009; Paczkowski & Kuruzovich, 2016; Smith

& Tabak, 2009). In 2004, 10.3 million U.S. Americans performed roughly seven hours of job-related work per week at home without a formal compensation agreement (United States Department of Labor, 2005). Highlighted within this literature is the need for research that can address work-related communication stressors in order to decrease conflicts between work and home domains (e.g., Fenner & Renn, 2010), as it is currently unclear how organizations are responding to the increased strain resulting from technological advances.

Thus, organizational scientists have identified the influence of work-related technology on wellbeing as an increasingly important avenue of research. Barber and Santuzzi (2015) recently advanced this research stream via an occupational health perspective by developing a measure of *telepressure*, which is a preoccupation with and desire to respond quickly to incoming work-related messages. This preoccupation and urge to respond could happen both during the workday, as well as after hours. Research thus far has conceptualized telepressure as part of a stress process, whereby environmental conditions and individual factors likely act as stressors prompting this preoccupation with incoming messages, which then results in negative health and wellbeing strain outcomes (Barber & Santuzzi, 2015; 2016). However, many of these theorized predictors remain unexamined. For example, it is unclear how an organization's after-hours response expectations (Piszczek, 2017; i.e., the extent to which employees perceive their organization expects them to be available and communicating electronically (e.g., over email) after they go home) may predict telepressure, particularly for those employees who find their work very meaningful. Additionally, work-family outcomes, such as work-to-family conflict (WTFC) (Carlson, Kacmar & Williams, 2000), which is the degree to which work interferes with and is incompatible with home life, are important yet unexamined potential outcomes of

telepressure.[1] A better understanding of predictors and outcomes will advance our understanding of telepressure as a stress process.

As mentioned, telepressure thus far has been conceptualized in relation to negative job, health, and wellbeing variables; however, its potential relation to more positive workplace factors has yet to be considered. In her review article, Kossek (2016) argues that there are likely complexities that move beyond a dichotomization of good or bad in regards to the influence of work and technology on home life. For example, it is unclear how these relationships may differ for those who find their work particularly meaningful compared to those who do not. Meaningful work, or the belief that one's work matters within the larger context of their life (Steger, Dik, & Duffy, 2012), has been typically considered desirable, and thus examined in relation to positive work outcomes. However, this study will begin to challenge some of those commonly held assumptions. More specifically, I argue that meaningful work can actually increase experiences of telepressure, as those who find work meaningful are likely to care more about promptly responding to messages because they find meaning and enjoyment in their job and do not want the organization's work to be slowed on their behalf.

I draw on Kahn and Byosiere's (1992) elaboration of the Institute for Social Research (ISR) model from the University of Michigan (Katz & Kahn, 1978), in order to investigate experiences of telepressure as a stressor. In particular, after-hours electronic communication expectations from the organization (Piszczek, 2017) is examined as a predictor of telepressure, and WTFC (Carlson et al., 2000) is examined as an outcome of telepressure. The final aim of this study is to understand this process for those who ascribe high meaning to their work; therefore,

[1] To clarify, this paper uses both the terms "home" and "family", as the items relating to response expectations and WTFC are both home and family specific.

supervisors, who likely find work meaningful, more so than general employees, were chosen as a sample. For a conceptual model, see Figure 1.

Anticipated contributions. This study makes three novel theoretical contributions to the nascent telepressure literature, drawing from both the ICT and technostress literatures. Telepressure and ICT use differ in an important regard: telepressure is a *cognitive* evaluative process and ICT use is an actual *behavior* that may result from experiences of telepressure. Technostress also differs from telepressure, as technostress refers to the strain resulting from individuals' interactions with ICTs for work-related purposes (e.g., Ayyagari, Grover, & Purvis, 2011; Brod, 1984). Therefore, both of these research streams are distinct from telepressure, yet informative in evaluating the contributions resulting from this study.

The first contribution of this study lies in examining a predictor of telepressure. Predictors have yet to be examined in this literature, as the vast majority of telepressure and ICT research has focused on outcomes, with findings demonstrating the negative impacts on health and wellbeing (e.g., poorer sleep quality, physical burnout; Barber & Santuzzi, 2015). Although Barber and Santuzzi (2015) suggest that environmental factors in the workplace influence telepressure, virtually no studies to date have tested such predictors. One such factor is an organization's after-hours response expectations (Piszczek, 2017). Barber and Santuzzi (2015) began to explore response expectations in relation to telepressure with an item assessing prescriptive norms. However, a full scale measuring this construct has not yet been tested as a predictor of telepressure. A better understanding of predictors will expand the nascent theory around telepressure, from which researchers can eventually identify the most important antecedents for organizations to intervene upon. Therefore, as a first effort in this direction, organizational response expectations is examined as a predictor for two reasons. First, response

expectations can be feasibly addressed by organizations, therefore representing a meaningful as well as practical predictor to target. Second, examining this predictor addresses Barber and Santuzzi's (2015) call for future research to investigate the influence of organizational features and norms on workplace telepressure.

This study also makes an important theoretical contribution by examining individual dimensions of WTFC as outcomes in relation to telepressure. WTFC is related to a range of significant personal and family outcomes (e.g., depression, physical health, parental distress; e.g., Britt & Dawson, 2005; Hammer, Cullen, Neal, Sinclair, & Shafiro, 2005; Kinnunen, Feldt, Mauno, & Rantanen, 2010). However, only one study to date has examined each dimension of WTFC in relation to ICT use after hours, a related construct representing actual technology use behaviors outside of work, rather than the appraisal of incoming messages (Ferguson, Carlson, Boswell, Whitten, Butts, & Kacmar, 2016), and no studies have examined the individual WTFC dimensions in relation to telepressure. The three dimensions of WTFC are time-based (i.e., time taken attending to work restricts the time available for family), strain-based (i.e., demands at work interfere with home life), and behavior-based (i.e., behaviors that are effective at work are counter-productive at home) WTFC (Carlson et al., 2000). Ferguson and colleagues (2016) examined mobile device use for work during family time, finding that it significantly and positively related to all three types of WTFC (i.e., time-based, strain-based, behavior-based). However, their study used a sample of job incumbents across all levels and limited analyses only to small, easily portable devices (i.e., smartphones and tablets). Furthermore, given that this article, along with the rest of the ICT literature, examines technology use and telepressure examines the appraisal of messages as a stressor, we expect telepressure to demonstrate relationships with all three WTFC dimensions. Thus, the current telepressure study evaluates

WTFC within a cognitive stressor-strain framework, rather than a behavioral framework more characteristic of the existing technology use literature. Understanding how each dimension of WTFC relates to telepressure is important in order to pinpoint the best solutions for alleviating the conflict between work and home domains.

Third, in addition to better understanding predictors and outcomes of the telepressure stress process, this study also considers meaningful work as a moderator of the response expectations–telepressure relationship. Meaningful work has gained popularity in both the media and research in recent years, being framed in an almost unequivocally positive light (e.g., Pratt & Ashforth, 2003; Rosso, Dekas, & Wrzesniewski, 2010). For example, Michaelson (2005) argues that organizations are morally obligated to help employees experience meaningful work due to the associated positive benefits, including greater job satisfaction (e.g., Kamdron, 2005) and wellbeing (e.g., Arnold, Turner, Barling, Kelloway, & McKee, 2007). Nevertheless, I propose there is a potential "dark side" of meaningful work, such that it may intensify telepressure. No study has yet examined the role of meaningful work in relation to telepressure. However, the notion of a "dark side" is beginning to be explored with calling, a slightly more narrow construct falling under the larger umbrella of meaningful work, that refers to work that one believes serves a higher purpose (Bunderson & Thompson, 2009; Dik & Duffy, 2009). Therefore, understanding the moderating role of the broader concept of meaningful work in the response expectations–telepressure relationship will help clarify when meaningful work may come at a cost. Additionally, it is important to use an appropriate sample to test meaningful work. Therefore, supervisors, who tend to have higher levels of job involvement (e.g., Holstad, Korek, Rigotti, & Mohr, 2014; Kieschke & Schaarschmidt, 2008) and likely experience more of the nuances of this construct, were chosen as participants for this study.

In the next section, past literature on technology trends will be examined, particularly as they relate to ICT use, telepressure, and supervisor-specific samples. Following a summary of the literature, the theoretical framework for this study, Kahn and Byosiere's (1992) elaboration of the ISR model of occupational stress, will be detailed.

Technology Use Trends

To understand the current trends of work-related ICT use as a stressor, it is best to take a brief look back at recent history. The 1980s witnessed the beginning of significant organizational downsizing and restructuring (American Management Association, 1997; Murphy & Sauter, 2003). This led to consolidation via job combining, or the merging of multiple jobs into one, for which workers with broad skills, capable of performing many duties, became in high demand (Derks & Bakker, 2014; Murphy & Sauter, 2003). Consequently, hours spent working began to rise, with data from the Department of Labor indicating that married couples spent 717 more hours working in 1997 than in 1969 (Department of Labor, 1999; Murphy & Sauter, 2003).

In addition to longer working hours due to organizational restructuring, two additional factors have further influenced the evolving context of work: globalization and technological advances. The number of international organizations and organizations conducting business abroad has risen, with a sharp increase in international trade in the early 2000s and again in 2010 after the recession (World Trade Organization, 2015). Consequently, in order to accommodate different time zones and maintain productivity, many businesses began to function at all hours of the day, thus facilitating the 24/7 economy mentioned earlier. An inherent aspect of globalization is technology, which has also dramatically grown and changed the nature of work in its own right (World Trade Organization, 2015).

In line with the rise in organizational technology use, the Bureau of Labor Statistics indicates that professional industries are experiencing the most growth, whereas laborers and clerical industries are slowing, and agriculture, forestry, fishing and repair industries are declining in the percentage of overall employment (BLS, 2007; Tetrick & Quick, 2011). The industries with reported declines are occupations where electronic communication is likely not as vital for the average employee. Conversely, professions expected to grow, such as computer software engineers and network systems and data communication specialists, rely heavily on interactions with technology (BLS, 2009; Tetrick & Quick, 2011). Commensurate with these changing job demographics, employee reports of checking work-related communications via technology after hours tripled from 2002 to 2008 (Madden & Jones, 2008).

Not only is communication technology becoming more prevalent, the nature of these technologies is changing, as well. Technology-mediated communication such as e-mail is asynchronous by design, meaning that replies to conversations can happen at different times, instead of immediately, as in the case of face-to-face communication (Barber & Santuzzi, 2015). However, the increasingly close relationship between users and technology has led to quicker response times, more akin to synchronous communication. Indicative of this, Jackson, Dawson, and Wilson (2003) found that 70% of employees opened incoming messages within six seconds, and 85% within two minutes of receipt. As work-related technology use continues to rise, research on this topic has also taken off in the last decade.

ICT Use and Technostress

As mentioned, the telepressure literature is still in its early stages. However, the ICT use and technostress literature, housed within the field of information systems, is generally more well-established. After-hours work-related ICT use has typically been conceptualized in the

literature as supplemental work after hours requiring the use of technology in the form of smartphones or computers, for example (e.g., Barber & Jenkins, 2014; Derks & Bakker, 2014; Richardson & Thompson, 2012). Recently, a positive relationship between telepressure and work-related ICT use at home was found (Barber & Santuzzi, 2015). Although telepressure, ICT use, and technostress are related, as telepressure has been shown to predict ICT use, and engagement with ICTs can lead to technostress (e.g., Ayyagari et al., 2011; Barber & Santuzzi, 2015), they differ in important regards, as previously discussed. Therefore, it would be inappropriate to blindly assume all ICT and technostress relationships also hold for telepressure. Thus, given the limited telepressure research to date, an examination of current ICT and technostress literature is necessary to inform the current telepressure study. Below, I describe past research related to predictors and outcomes of work-related ICT use and technostress.

Although there is a larger literature around ICT use in general, articles focusing specifically on after-hours work-related ICT use best inform my model, and I will therefore be focusing on that literature here. Few articles have investigated predictors of after-hours work-related ICT use. However, of the limited number that do exist, job involvement (Boswell & Olson-Buchanan, 2007), ambition (Boswell & Olson-Buchanan, 2007), perceived usefulness of technology (Fenn & Renner, 2010), and after-hours response expectations (Piszczek, 2017) have been examined, and all were found to have significant positive relationships. Research around work-home segmentation preference, which represents one's preference around managing home and work boundaries, has revealed that individuals who have high work-role identification, and who prefer to integrate their work and home lives, engage in more work-related ICT use at home compared to those who prefer to segment, thereby keeping work separate from home (Duxbury, Higgins, Smart, & Stevenson, 2014; Park & Jex, 2011). However, individuals who prefer to

segment but feel pressure from their organization to stay virtually connected to work, display increased ICT-enabled connectivity behavior similar to integrators (Duxbery et al., 2014).

Within the technostress literature, there have primarily been five conditions identified as predictors of technostress and the inability to cope with work-related ICT demands. These five conditions are: techno-overload, techno-invasion, techno-complexity, techno-insecurity, and techno-uncertainty (Tarafdar, Tu, Ragu-Nathan, & Ragu-Nathan, 2007). The first of these, techno-overload describes situations in which the nature of ICTs at work force employees to work faster and longer than they otherwise would. Next, techno-invasion is similar to the literature that sparked telepressure research and refers to the inescapable nature of ICTs that allow users to potentially be reached at any time, regardless of location. Techno-complexity leads to technostress when employees feel that they lack the skills necessary to competently interact with certain aspects of ICT. Related to that idea, techno-insecurity is job insecurity due to either perceived automation of one's job in the future or fears of being replaced by someone with more advanced ICT knowledge. Lastly, techno-uncertainty is associated with employees' worries that they must constantly keep up with evolving ICT trends and advances (Tarafdar et al., 2007).

Although these five situations have been identified as conditions that create technostress, other research has identified factors that can decrease technostress. For example, involving employees and considering their preferences before implementing new ICTs (e.g., allowing employees to participate in the planning, formatting, and configuration) has been shown to reduce technostress (e.g., Clark & Kalin, 1996; McKeen & Guimaraes, 1997; Nelson & Kletke, 1990; Olson & Ives, 1981; Ragu-Nathan, Tarafdar, & Ragu-Nathan, 2008). More specifically, Tarafdar, Tu, and Ragu-Nathan (2010) argue that involving employees in the ICT

implementation process reduces technostress in four ways. First, this involvement enhances user familiarity with the ICT. Next, employees are more willing to spend time learning the new ICT. Additionally, employees have a better sense as to why the organization wants to implement the ICT. Lastly, due to the other three outcomes, employees experience less job insecurity as a result of the ICT (Tarafdar et al., 2010).

In addition to predictors, outcomes of work-related ICT use at home and technostress can broadly be categorized into health, job, and work-home outcomes. Within health outcomes related to ICT use for work after hours, three studies examined wellbeing and recovery, with none finding significant results (Ohly & Latour, 2014; Richardson & Thompson, 2012; Ward & Steptoe-Warren, 2014). However, the link between ICT use and negative health outcomes, such as suboptimal self-rated health and work-related health impairment, was found to be significant (Arlinghaus & Nachreiner, 2014; Stadin, Nordin, Broström, Hanson, Westerlund, & Fransson, 2016). Three articles that have examined sleep all found significant relationships between work-related ICT use and poorer sleep outcomes (Barber & Jenkins, 2014; Lanaj, Johnson, & Barnes, 2014; Schieman & Young, 2013). Similarly, research has found a positive relationship between ICT use and emotional exhaustion (Derks, van Mierlo, & Schmitz, 2014; Piszczek, 2017; Ragsdale & Hoover, 2016), as well as distress (Chesley, 2014; Schieman & Young, 2013).

Although the existing research on health outcomes seems to indicate that work-related ICT use after hours is related to poorer health, job outcomes have more mixed results. For example, Diaz, Chiaburu, Zimmerman, and Boswell (2012), examining ICT flexibility for work, found a significant positive relationship with job satisfaction, whereas Wright et al. (2014) examined after-hours work-related ICT use and found a significant negative relationship with job satisfaction. Additionally, Wright et al. (2014) were unable to find a relationship with turnover

intentions, but Ferguson et al. (2016) found a significant negative relationship. Other constructs that have demonstrated a significant positive relationship with ICT use after hours include job involvement (Boswell & Olson-Buchanan, 2007), job control (Richardson & Thompson, 2012), ambition (Boswell & Olson-Buchanan, 2007), as well as job burnout (Wright et al., 2014) and job strain (Stadin et al., 2016). Conversely, work engagement (Lanaj et al., 2014; Ragsdale & Hoover, 2016), detachment from work (Park et al., 2011; Richardson & Thompson, 2012), and organizational commitment (Ferguson et al., 2016) have all been shown to be significantly and negatively related to ICT use, with affective commitment showing no relationship (Boswell & Olson-Buchanan, 2007).

Lastly, in terms of work-home outcomes, global work-family conflict (WFC) is the most researched outcome of ICT use, being examined in 14 studies, with all studies finding significant positive relationships (Boswell & Olson-Buchanan, 2007; Butts, Becker, & Boswell, 2015; Derks & Bakker, 2014; Derks, Bakker, Peters, & van Wingerden, 2016; Derks, Duin, Tims, & Bakker, 2015; Diaz et al., 2012; Fenner & Renn, 2010; Ferguson et al., 2016; Park & Jex, 2011; Ragsdale & Hoover, 2016; Richardson & Thompson, 2012; Schieman & Young, 2013; Ward & Steptoe-Warren, 2014; Wright et al., 2014). As mentioned, only one of these studies has analyzed each dimension of WTFC, finding significant positive relationships with all three dimensions (Ferguson et al., 2016). Boswell and Olson-Buchanan (2007) also found that ICT use after hours was related to both self and significant other reports of global WFC. Two studies have utilized daily diary designs to evaluate global WFC; using a seven-day design, Butts and colleagues' (2015) research indicates that the time required to attend to work-related ICT after hours led to global WFC via anger. Derks et al. (2016) found that work-related smartphone use after hours related to global WFC within a four-day daily diary design. Another work-home

outcome that has been considered is daily family-role performance, for which results were only significant for integrators, not segmenters (Derks et al., 2016). Additionally, Piszczek (2017) found that ICT use was related to higher boundary control for integrators and lower boundary control for segmenters. However, negative work-to-family spillover was not significantly related to ICT use (Chesley, 2005).

With regards to the technostress literature, most research has focused on job-related outcomes. For example, technostress has been shown to negatively relate to job satisfaction as well as organizational commitment (e.g., Ragu-Nathan et al., 2008). Relatedly, increased technostress has also been shown to positively relate to job insecurity (e.g., Ayyagari et al., 2011). Technostress also has consequences for how one performs on the job. For example, Tarafdar and colleagues (2007) demonstrated that increased technostress related to lower productivity at work and increased role stress. Furthermore, ICTs that lead to more automated or streamlined work can lead one to feel increased levels of boredom, increased perceived work demands, and decreased perceived job control (e.g., Dolan & Tziner, 1988; Tarafdar et al., 2010; Zuboff, 1988). Work-home outcomes are not as well studied in the technostress literature. However, Ayyagari and colleagues (2011) found more technostress was related to increased work-home conflict. Additionally, they found a similar relationship between technostress and perceptions of privacy invasion. Although existing literature has alluded to health outcomes (i.e., as a consequence of the strain resulting from technostress; Ayyagari et al., 2011), no studies have explicitly researched these outcomes.

Although work-related ICT use and technostress are conceptually related to telepressure, and informative of the direction telepressure research is headed, the distinction between these three constructs remains important. Whereas work-related ICT use is concerned with the

behavior of *engaging* with technology after hours and technostress is focused on the strain resulting from ICT use, Barber and Santuzzi (2015) emphasize that telepressure is a *psychological state* concerned with ruminating on incoming messages. Although the current study was informed by the ICT and technostress literatures, that research is limited, as it does not address the psychological processes. However, examining the psychological processes are important in order to understand how the telepressure stress process unfolds, which can ultimately inform organizational changes than can minimize this process.

Telepressure

As mentioned, telepressure has been conceptualized as a stress process, and more specifically, is the perception that incoming messages from work need to be attended to immediately (Barber & Santuzzi, 2015). Although the experience of telepressure is not new, the term telepressure was only recently introduced, thus explaining the dearth of published articles assessing the construct. Only two articles to date have specifically examined telepressure in academic peer-reviewed journals (Barber & Santuzzi, 2015; 2016). In their initial two-study validation paper, Barber and Santuzzi (2015) demonstrated that telepressure is related to ICT use and faster response times, workaholism, public self-consciousness, and health measures, such as higher levels of burnout and health-related absenteeism. The second published study on telepressure also comes from Barber and Santuzzi (2016), but investigates general telepressure, as opposed to workplace telepressure, within a working college sample. This study had similar findings, with telepressure demonstrating significant positive relationships with burnout, perceived stress, and poor sleep. However, similar to the ICT literature, telepressure was not significantly related to more positive outcomes (e.g., work-life balance, general life satisfaction). Taken together, these two articles (Barber & Santuzzi, 2015; 2016) provide evidence that

telepressure stems, at least in part, from the work environment. Although only two published studies with measures of telepressure exist, many more articles make reference to the construct in a tangential manner (e.g., Ehrlich, 2017; Nowack, 2017; Stich, Farley, Cooper, Tarafdar, 2015; Svetieva, Clerkin, & Ruderman, 2017). These recent studies on telepressure are beginning to evaluate important outcomes, testing these relationships among specific working populations has not yet been done.

Supervisor telepressure. Most telepressure, ICT, and technostress studies have relied on convenience sampling or large national surveys (e.g., National Study of the Changing Workforce) and have not focused on the type of employee being studied. Of particular note, no study within the ICT, technostress, or telepressure research stream that I am aware of has used a supervisor-only sample. However, supervisors and employees do not necessarily internalize and react to incoming messages the same way. Thus, I argue that supervisors are an important sample to consider when trying to understand the telepressure process for those who find high levels of meaning in their work.

Specifically, supervisors tend to have higher levels of responsibilities as well as organizational commitment and job involvement compared to general employees (e.g., Bass & Riggio, 2006; Holstad et al., 2014; Kieschke & Schaarschmidt, 2008; Lodahl & Kejner, 1965; Moon, 2000; Steger et al., 2012; Tims, Bakker, & Xanthopoulou, 2011), the latter being characteristic of meaningful work. Boswell and Olson-Buchanan (2007), studying individual differences, found that ICT use after hours varied based on the employee's ambition and level of job involvement. In other words, employees who strongly identified with their job and considered it an important part of their life, spent more time working after hours. These findings are consistent with Fenner and Renn (2004) who argued that high job involvement leads

employees to be more internally motivated to continue working after hours. Although Boswell and Olson-Buchanan (2007) proposed that these individual differences related to working after hours may be a way for the employee to get ahead, they did not control for job position.

Barber and Santuzzi (2016) conducted a study on general telepressure among employed and non-employed college students. Although distinct from a working adult sample, they did find differences among certain outcomes indicating that employment level likely plays a role in experiences of telepressure. Telepressure was significantly and positively related to burnout and perceived stress, and was negatively related to work-life balance satisfaction for employed students but not unemployed students.

Furthermore, supervisors also represent an important population to study in regards to meaningful work. Past research suggests that supervisory-type roles may present a dark side in terms of the personal sacrifices made for personally meaningful work. In a qualitative study with zookeepers, Bunderson and Thompson (2009) found that although those experiencing a high sense of calling found their work to be meaningful and important, they also viewed their work as a duty for which they were willing to sacrifice pay, personal time, and comfort. This first fruitful exploration into the dark side of calling highlights the need to also investigate meaningful work in this context, and particularly within a supervisor sample. Although zookeepers are not supervisors in the typical sense, Bunderson and Thompson (2009) note that, as a whole, the profession is highly sought after and individuals tend to have a high level of commitment, which is typical of supervisors (e.g., Holstad et al., 2014). Therefore, examining the moderating role of meaningful work among supervisors will advance our theoretical understanding of how telepressure functions in a certain population.

Lastly, focusing on supervisors has practical implications. For example, supervisor turnover is more costly than general employee turnover due to the increased skill demanded in those positions, difficulty in recruiting suitable candidates, and the more in-depth training that typically accompanies those positions (e.g., Simons & Hinkin, 2001; Tracey & Hinkin, 2008). Given that nearly 80% of the 10.3 million workers performing supplemental work at home in 2004 were managers or professionals, this is a timely and important group to consider (Fenner & Renn, 2010; United States Department of Labor, 2005). Therefore, supervisors not only represent a practical population to study, but are also well-suited to test the potential dark side of meaningful work within the telepressure process.

Theoretical Rationale: ISR Model

In order to further investigate these claims of the work environment relating to telepressure, as well as to answer our larger research question of how this process unfolds for supervisors who find their work meaningful, this study draws on Kahn and Byosiere's (1992) elaboration of the ISR model. Current telepressure, ICT, and technostress literature has largely drawn on boundary theory (e.g., Barber & Jenkins, 2013; Boswell & Olson-Buchanan, 2007; Duxbury et al., 2014; Piszczek, 2017), as well as the technology acceptance model (Fenner & Renn, 2010; Paczkowski & Kuruzovich, 2016; Tennakoon, de Silveira, & Taras, 2013), conservation of resources theory (Golden, 2012; Richardson & Thompson, 2012; Ward & Steptoe-Warren, 2014), job demands-resources theory (Rasgdale & Hoover, 2015; Piszczek, 2017), and person-environment fit theory (e.g., Ayyagari et al., 2011). Interestingly, none of these frameworks have a focus on a cognitive appraisal of the stressor, despite Barber and Santuzzi (2015) conceptualizing it as such. For example, boundary theory focuses on how individuals actively manage their different life roles. The technology acceptance model details

how the perceived usefulness and perceived ease-of-use of a technology influences how one will interact with said technology, conservation of resources theory deals with ensuing strain from loss (either real or threatened) of resources, and the job demands-resources theory similarly is concerned with the resources in relation to demands at work. However, situating telepressure within a cognitive stressor-strain framework is important to best understand the phenomenon. As Barber and Santuzzi (2015) conceptualized it, telepressure is a cognitive appraisal of incoming messages (the stressor) leading to negative strain outcomes (e.g., burnout, health-related absenteeism). Kahn and Byosiere's (1992) elaboration of the ISR model is well suited to conceptualize telepressure, as it accurately portrays and emphasizes this cognitive appraisal process.

The original ISR model was developed by French and Kahn (1962) but has since undergone several iterations. Kahn and Byosiere (1992) comprehensively integrated findings from numerous theoretical frameworks to create their more recent model of occupational stress. They note that the biggest deficiency of the initial ISR model was the omission of a cognitive appraisal process, which they amended in their version. Kahn and Byosiere's (1992) model depicts a complex causal sequence, beginning with organizational characteristics that lead to specific stressors, which then lead to a cognitive appraisal of the stressor, followed by the response generated by the appraisal, and finally long-term consequences. Enduring properties of the person as well as properties of the work situation can moderate the causal relationship at each step. As an initial test of the ISR framework, this study evaluates an organizational predictor (i.e., response expectations), the cognitive appraisal (i.e., telepressure), and the response to the appraisal (i.e., WTFC), in addition to properties of the situation as a moderator (i.e., meaningful work).

Kahn and Byosiere (1992) summarize literature on organizational predictors, which includes more abstract and distal characteristics (e.g., economic conditions), as well as more proximal, job-specific factors (e.g., span of control, organizational distance, industry), both of which they incorporate into their model. Although Kahn and Byosiere's (1992) description of organizational predictors is quite broad, after-hours electronic communication response expectations (Piszczek, 2017) fits well into their conceptualization of job-specific factors. Response expectations refers to an organization's expectations of how much employees should engage with electronic communications for work purposes after the work day has ended (Piszczek, 2017). Although Kahn and Byosiere (1992) do not specifically mention this type of expectation, they do mention organizational policies and role ambiguity (uncertainty about job expectations), which have the ability to create strain at the individual job level, as predictors. Response expectations similarly impact how individuals perform their specific job. Therefore, testing organizational response expectations extends their conceptualization by broadening the scope of predictors that fits into their model.

Next, Kahn and Byosiere (1992) also included a cognitive element to their version of the ISR model with the addition of the appraisal process, following research conducted by Lazarus and Folkman (1984). Kahn and Byosiere (1992) argue that individuals react differently to stressors, and it is therefore important to take into account these individual perceptions and interpretations. Three critical processes happen during this appraisal: a redefining of the event, a judgment of possible actions and outcomes, and an enactment that transitions from cognition to behavior (Beehr & Bhagat, 1985). These three processes occur when one experiences telepressure. First, an individual receives a message (the event), and then places that event within a larger context. For example, one might consider who sent the message (e.g., subordinate or co-

worker) and the time of the message (e.g., received the night before a big meeting). Next, the individual will consider different scenarios based on how they choose to respond. For example, taking a long time to respond to a subordinate might slow their progress on a project. After different outcomes have been considered, an individual will decide how to proceed. Continuing with the last example, the individual may decide to respond quickly in order to best support their employee. Together these processes constitute the preoccupation and urge to respond quickly that is characteristic of telepressure (Barber & Santuzzi, 2015).

The resulting relationship between the appraisal process of a stressor and strain outcomes has been well documented (e.g., Vinokur, Threatt, Vinokur-Kaplan, & Satariano, 1990). Kahn and Byosiere (1992) conceptualize responses to stressors in three categories: physiological, psychological, and behavioral. Physiological responses mainly include objective health measures such as blood pressure, heart rate, and cortisol levels. Psychological responses to stressors are much more numerous and include burnout, depression, job (dis)satisfaction, life (dis)satisfaction, frustration, strain, and irritation, among others. Similarly, there are numerous types of behavioral responses from stressors that Kahn and Byosiere (1992) note, including absence, counterproductive behaviors, and disruptive performance. These stressor responses are not specific to work, as they also include personal and interpersonal outcomes (e.g., smoking and role as a friend/dating partner). This study examines WTFC as an outcome. Although not explicitly captured in their categories, WTFC (Carlson et al., 2000), is similar to several of the psychological and behavioral outcomes noted by Kahn and Byosiere (1992). In particular, WTFC assesses conflict between work and home life, strain at home, and the impact of work on family relationships, which shares similarities with (dis)satisfaction with life, strain, and role as a friend/dating partner. However, as WTFC incorporates the influence of one domain (work) on

another (family/home), examining this outcome further extends Kahn and Byosiere's (1992) model, by testing it in a work-family framework.

In addition to the causal components, the ISR model also depicts enduring properties of the person and properties of the situation as moderators of the abovementioned relationships. The current study tests properties of the situation as a moderator, which includes any organizational property that can alter the perceptions evoked by certain stressors. This study tests meaningful work as a moderator of the response expectations–telepressure relationship, with the expectation that meaningful work will strengthen the positive relationship between the two.

Overall, this study maps onto and tests much of Kahn and Byosiere's (1992) ISR model, by testing telepressure as a mediator of the response expectations-WTFC relationship. Additionally, this study seeks to extend their theory by considering meaningful work as a moderator of the response expectations–telepressure relationship. The rationale for each of the proposed relationships is discussed next.

Hypothesis Development

Organizational response expectations and telepressure. As discussed, the ISR model conceptualizes aspects of the organization as a predictor. To test this relationship this study examines after-hours response expectations as a predictor of telepressure. Despite ICTs such as email, which ostensibly allow for flexibility in terms of response times, Matusik and Mickel (2011) note that perceptions around acceptable usage are driven by an organization. As technology has advanced, norms around availability have also changed in some occupational contexts, with a general increase in expectations of availability, particularly via virtual means (Derks et al., 2015, Green, 2001, Taylor & Todd, 1995). A 2011 study using semi-structured interviews found that 63% of participants described organizational sources of expectations

around ICT use as opposed to more self-driven expectations (Matusik & Mickel, 2011). However, this is not uniformly the case, and organizations do differ in terms of their after-hours availability expectations of employees (e.g., Derks et al., 2015; Kreiner, 2006).

The impact of organizational norms around response expectations has begun to be investigated by Barber and Santuzzi (2015) in their telepressure research. In their initial two-study validation paper, Barber and Santuzzi (2015) found a correlation between telepressure and both descriptive norms (e.g., mirroring others' behavior in order to fit in) and prescriptive norms (e.g., expectations within the workplace). Whereas prescriptive norms were conceptualized somewhat similarly to organizational after-hours electronic response expectations, they were measured with only one item assessing expected speed of response (Afifi & Metts, 1998). In their second study, Barber and Santuzzi (2015) used a different two-item measure of response expectations (Day, Paquet, Scott, & Hambley, 2012), again finding a positive correlation with telepressure. Interestingly, the directions for the telepressure scale are workplace specific, but not *after-hours* specific. However, throughout the validation paper Barber and Santuzzi (2015) are not consistent in reference to whether telepressure should be general or after-hours specific. Therefore, as this is a new construct, I chose to measure telepressure consistent with the directions Barber and Santuzzi (2015) used. However, despite this lack of clarity, Barber and Santuzzi (2015) did find that telepressure positively related to response expectations, and therefore a relationship should emerge with this more extensive response expectations measure.

Although we have limited knowledge of telepressure predictors, more research has been done to understand predictors of work-related ICT use. For example, the psychological climate for work-related ICT use after hours, measured by goals and rewards that reinforce after hours connectivity, has been shown to positively relate to ICT use at home (Fenner & Renn, 2010).

Additionally, Richard and Benbunan-Fich (2011) found a positive relationship between organizational norms around ICT use and connectivity at home. Given that expectations could be more salient than norms, in the sense that they are more explicitly conveyed in an organization (Derks et al., 2015; Piszczek, 2017; Richard & Benbunan-Fich, 2011), we expect after-hours response expectations to lead to increased feelings of telepressure. For example, supervisors in a workplace with high after-hours response expectations are expected to be reachable while at home and even while on vacation. Therefore, supervisors in such organizations should feel more telepressure than supervisors working in an environment where the expectations either do not exist or are less strong. With lower response expectations, employees are not expected to watch for incoming messages or necessarily communicate after hours. Therefore, the pressure of constantly scanning one's messages because of high response expectations likely leads one to appraise these messages as requiring immediate attention (i.e., higher levels of telepressure).

Hypothesis 1: After-hours organizational response expectations will be positively related to supervisor telepressure.

Telepressure and WTFC. Kahn and Byosiere's (1992) ISR model also depicts responses to stress as an outcome of the stressor. Barber and Santuzzi (2015) have shown that telepressure is positively correlated with both techno-overload (i.e., the feeling of being pressured to do more work than one can comfortably handle), as well as ICT work-home boundary crossing (i.e., the act of performing ICT-related work at home). In other words, this research indicates a positive relationship between telepressure and both strain (via techno-overload) and work overlapping with the home domain (via boundary crossing). Although Barber and Santuzzi (2016) did not specifically examine WTFC, they did study work-life balance (i.e., satisfaction with the handling the demands from work and home lives), finding that

employment status among college students moderated the relationship between telepressure and satisfaction with work-life balance, such that there was no relationship among non-employed students, but a positive relationship among employed students. Therefore, this study seeks to extend these findings by examining if telepressure is associated with WTFC.

WTFC broadly encompasses inter-role conflict between work and family life, and can be bi-directional, meaning that work can interfere with family, and family can likewise interfere with work. Given that this study examines how the receipt of work messages after hours impacts home life, I only examine work interfering with family (i.e., WTFC). The opposite direction, family interfering with work, is not considered as family has less of a bearing on the receipt of work-related messages. WTFC includes three dimensions: time-based, strain-based, and behavior-based WTFC (Carlson et al., 2000). Time-based WTFC arises when the time needed to attend to work matters takes away from family or home time. When employees receive emails or other electronic communication that lead to telepressure, time-based WTFC likely follows. Supervisors in particular have matters that may require immediate attention. For example, an employee illness may necessitate a supervisor re-arranging schedules at night via technology or a final report may need polishing last-minute requiring that one puts in time after standard work hours and notifies clients or team members.

Strain-based WTFC stems from conditions or strains at work that interfere with one's normal participation in home life. Supervisors tend to shoulder more responsibility than general employees due to their elevated status, the burden of which can lead to strain. For example, a supervisor may feel pressure for their sales team to reach their quarterly quota, have the urge to check and respond to incoming related messages, be drained from resolving conflicts between employees over email, or be frazzled from putting together a presentation for upper management

last minute that needs to be informed by information from their employees. This added emotional or physical strain can be difficult to detach from after work hours. For example, after experiencing the abovementioned strain from telepressure, an individual may then be too drained or distracted to go on a planned family bike ride or spend time with family.

The last dimension of WTFC is behavior-based WTFC. This dimension is characterized by behaviors that are helpful in a work context, but that are not appropriate or otherwise compatible with home life. A common example of this type of conflict occurs with police officers. Behavior that is helpful on the job, for example, a strict authoritarian approach with little flexibility, may be useful to enforce the law, but may lead to more conflict when trying to resolve an issue with a spouse or children. Within the context of this study, the behaviors supervisors employ might be counterproductive at home. For example, those experiencing high levels of telepressure have a desire to respond to incoming messages quickly despite the current task at hand. While this quick responsiveness is potentially useful at work and may assist with fulfilling supervisory duties, this approach to solving problems may not be helpful behavior at home. For example, responding too quickly to a partner as they are describing a difficult situation could be construed as a superficial answer lacking thought. Alternatively, becoming preoccupied with a phone call and leaving the floor half vacuumed could lead to a partner having to finish the chore. Therefore, these behaviors of either responding too quickly or becoming preoccupied could lead to conflict at home.

Hypothesis 2a Supervisor telepressure will be positively related to time-based WTFC.

Hypothesis 2b: Supervisor telepressure will be positively related to strain-based WTFC.

Hypothesis 2c: Supervisor telepressure will be positively related to behavior-based WTFC.

Telepressure as a mediating mechanism. The ISR model depicts a cognitive appraisal of stressors as a mediator between organizational characteristics and outcomes of stress (Kahn & Byosiere, 1992). The positive relationship between after-hours response expectations and WTFC can result from an increased sense of telepressure. High response expectations set by an organization would not by itself necessarily elicit the three dimensions of WTFC detailed earlier, rather it is only the interpretation and appraisal of those expectations in the form of telepressure that leads to the conflict. Put another way, high response expectations, in which employees feel like they must respond quickly, can arouse a cognitive process whereby one evaluates incoming messages as requiring immediate attention. That ensuing telepressure from the organization's after-hours communication expectations can affect the time one spends attending to messages after hours, as well as emotional (e.g., feeling strained) and behavioral (e.g., quickly opening messages and spending time attending to them) outcomes, comprising WTFC.

Hypothesis 3: Telepressure will mediate the relationship between after-hours organizational response expectations and supervisor WTFC.

The moderating role of meaningful work. Lastly, Kahn and Byosiere (1992) position properties of the situation as moderators of the organizational predictor-stressor relationship. I argue that supervisors' experiences of telepressure result from an interaction between their organization's response expectations and their own conceptualization of how work plays a role in their life (i.e., the meaningfulness of work). Meaningful work, or the belief that one's work matters within the larger context of their life (Steger et al., 2012), has been conceptualized as a state, resulting from both individual as well as environmental factors (Steger et al., 2012). More specifically, meaningful work has traditionally been considered to arise from four different sources: the context, others, the self, and the spiritual life (Rosso, Dekas, & Wrzesniewski,

2010). Most commonly, positive outcomes have been examined in the literature, including job satisfaction, career and organizational commitment, organizational citizenship behaviors (exhibiting helping behaviors at work beyond what is expected), and intrinsic work motivation (e.g., Organ, 1988; Steger et al., 2012).

While supervisors tend to personally identify with their work, have higher levels of job engagement, and experience higher levels of calling (e.g., Hall & Chandler, 2005), Bunderson and Thompson (2009) point out that higher calling can lead to one making sacrifices that impact personal life, such as time (e.g., taking work home) and pay (e.g., working for less money than one could otherwise get). These sacrifices were found to primarily result from an individual's sense of obligation or moral duty to perform the work. Therefore, as supervisors tend to experience higher levels of calling, they may also be more susceptible to the dark side of meaningful work.

Although supervisors who experience higher levels of meaning may enjoy their work, they also likely perceive more workplace telepressure. Meaningful work is related to work engagement, organizational commitment, and intrinsic motivation (e.g., Hall & Chandler, 2005; Steger et al., 2012). Similarly, telepressure is also related to work engagement, organizational commitment workaholism, and job involvement, which Barber and Santuzzi (2015) argue is likely intrinsically motivated. Therefore, given these shared properties, it is likely that supervisors experiencing meaningful work would also experience more telepressure than supervisors low in meaningful work, regardless of organizational response expectations. For example, someone who is very engaged with their work and committed to their organization will likely feel the need and obligation to respond to messages as they arrive. Conversely, individuals

who ascribe low meaning to their work are likely not as preoccupied with responding quickly to messages, as it does not have much of a bearing on their sense of self or life's purpose.

Despite these differences, Barber and Santuzzi (2015) note that telepressure stems from environmental as well as personal factors; therefore, increasing response expectations should increase feelings of telepressure for both those high and low in meaningful work. However, more meaningful work likely strengthens the positive relationship between response expectations and telepressure because individuals should adhere to these expectations to a greater extent than those low in meaningful work, thus resulting in a greater preoccupation with incoming messages. For example, if an organization expects employees to respond to messages quickly, then those who find meaning in their work, and view their work as a way to achieve their life's mission, should internalize those expectations more so than employees who do not derive a lot of meaning from their work.

> *Hypothesis 4:* Meaningful work will moderate the positive relationship between after-hours organizational response expectations and supervisor telepressure, such that this relationship will be enhanced under conditions of high meaningful work.

Method

Participants and Procedure

The current study utilizes data from a larger cross-sectional survey assessing supervisors' perceptions and experiences in the workplace. Participants in the United States who identified as supervisors were recruited using Qualtrics®. Recruitment for this study occurred via a paid Qualtrics® service, in which interested parties created a user profile. All recruited participants were then able to access the study online with a unique URL. An approximately 20-minute online survey was completed at participants' convenience. The survey was open for a period of one week in September 2017. Upon completion of the survey, participants were compensated by Qualtrics® either monetarily or via a point system, as per their preference indicated on their profile, which amounted to approximately $10.

Through this method, I was able to limit the sample to those who indicated they occupied a supervisory role on their initial profile. Eligible participants included employees working at least 30 hours per week, who also self-identified as a supervisor with at least one direct report, had worked at their organization for at least six months, and had access to their work email after hours. Since this was a paid service, Qualtrics® excluded participants who did not finish the survey, who completed less than 75% of the survey, or who failed the three attention checks that were included throughout the survey. Of the total 351 participants, 59 participants were excluded for not working at least 30 hours per week, 12 were excluded for not having access to work email after hours, and an additional two participants were excluded for having fewer than one direct report (n = 278). This sample size should be sufficient to detect effects, as Fritz and

MacKinnon (2007) note 90 participants is the recommended minimum sample size to detect a medium-sized effect in a mediation.

Participants in this Qualtrics® sample occupied a variety of supervisory levels, with 29.6% working as frontline managers, 40.8% as mid-level managers, and another 29.6% as executive leaders. Additionally, these supervisors reported working an average of 42.8 (*SD* = 7.9) hours per week and have worked in their current position for an average of 7.6 (*SD* = 4.4) years. The sample was fairly evenly split between men (48.3%) and women (51.7%) participants, and 77.7% of the sample self-identified as white. With regards to family characteristics, 65.6% reported being married or partnered, 34.7% reported having at least three hours of eldercare responsibilities per week, and on average participants had one child.

An ongoing debate in the organizational sciences literature exists around the use of Internet panel sampling. While traditionally considered inferior to organizational samples, Landers and Behrend (2015) argue that organizational samples are not necessarily "the gold standard" source. Rather, they argue that organizational samples instead represent a certain type of convenience sample, since most theories are not specific to one type of organization. In line with this, the ISR theory is not exclusive to one industry or occupation. Landers and Behrend (2015) also point out that in the industrial-organizational psychology literature in particular, not enough consideration is given to external validity (Pedhazur & Schmelkin, 1991), or how well a sample can generalize to the population of interest. Furthermore, true random sampling rarely occurs, as researchers typically have a relationship with the organization they study. Nevertheless, conclusions about organizations in general are often made, despite employees in one organization potentially differing from the general "organization population" in some meaningful way (e.g., due to company culture) (Landers & Behrend, 2015).

Landers and Behrend (2015) argued that Amazon's Mechanical Turk (MTurk®) online panel that recruits participants is inappropriate under certain circumstances. They argue that online panels should not be used to estimate either the frequency or magnitude of a phenomenon. However, online panels are appropriate if the goal is to establish if a phenomenon can occur (Landers & Behrend, 2015), which is in line with this thesis as one of the first studies to examine these variables in relation to one another. Furthermore, a Pew Research Center study, examining nine different online survey vendors, found that online panels can be a good alternative to traditional probability-based surveys for making population estimates (Pew, 2016), in line with the goals of this study. Behrend, Sharek, Meade, and Wiebe (2011) note that online contract labor portals can be a good alternative to a university student participant pool. Their findings indicate that participants from online sources tend to be older, more ethnically diverse, and have more work experiences. Additionally, the reliability from online portal samples tends to be as good or better than university student samples (Behrend et al., 2011).

One last important distinction to note is that this thesis study uses Qualtrics® online panel services instead of MTurk®. The Pew Research Center found that choice of survey vendor matters, with panels differing substantially in terms of participant recruitment, and more comprehensive sampling procedures leading to more accurate results (Pew, 2016). The paid Qualtrics® service used in this study used a more comprehensive screening procedure than MTruk® to ensure that only eligible workers participated. Additionally, other recent research indicates that Qualtrics® may provide higher quality data than MTurk® (Smith, Roster, Golden, & Albaum, 2016). Smith and colleagues (2016) found that Qualtrics® panel respondents spent more time answering questions, had fewer failed attention checks, and fewer incidents of cheating (i.e., fewer duplicate IP addresses). One potential reason for these differences is the

crowdsourcing nature of MTurk®, which makes screening more challenging, whereas only participants with pre-specified characteristics are invited to participate in the Qualtrics® panel surveys (Smith et al., 2016). Therefore, given the aim of this study is to specifically research supervisors with certain characteristics, Qualtrics® is the more appropriate online panel choice compared with MTurk®.

Sackett and Larson (1990) also noted that when the purpose of a study is to either test a theory, as in the case of this study, or to determine whether a phenomenon *can* occur (as opposed to whether it does occur or with what frequency) then generalizability is of less concern than internal validity. Landers and Behrend (2015) make the overarching point that no matter what sample is used, careful consideration should be given to how the characteristics of the particular sample could influence results. Dipboye (1990) found that field research has oversampled certain levels of employees; therefore, after giving careful consideration to my research question, I selected a supervisor-only sample. With this particular design, obtaining an organizational sample with enough supervisors to properly power this study would be difficult, but much more feasible with an online panel.

Measures

For all study measures listed below, Mplus® Version 8 was used to conduct CFAs. In accordance with Hu and Bentler (1999), the χ^2 statistic, CFI, TLI, RMSEA, and SRMR were used as fit statistics. A χ^2 statistic with an associated p-value of greater than .05, CFI greater than or equal to .95, TLI greater than or equal to .95, RMSEA less than or equal to .06, and SRMR less than or equal to .08 were used to indicate good model fit. Factor loadings of .40 were considered the lower acceptable threshold, although higher factor loadings are desirable (Raykov & Marcoulides, 2011).

Organizational after-hours response expectations. After-hours response expectations is a measure of an organization's expectations of employees engaging with electronic communications for work purposes after the work day has ended. This study uses Piszczek's (2017) adaptation ($\alpha = 0.92$) of Fender's (2010) seven-item scale. Participants were given the following instructions: *To what extent are the following statements true of you and your situation?* Example items include: "My organization expects me to respond to after-hours electronic work communications immediately", and "My organization expects me to be available for the organization to contact me in off hours.*"* Response options range from 1 (*Not at all true*) to 5 (*Completely true).* A single-factor CFA was conducted to assess the internal structure of the seven-item response expectations measure. This CFA revealed a model fit with the following indices: χ^2 (14) = 194.83, $p < .01$, CFI = .87, TLI = .81, RMSEA = .22, and SRMR = .06, and the factor loadings were all above 0.73, thus indicating questionable model fit.[2]

Workplace telepressure. Telepressure is a measure of one's psychological state in regards to their preoccupation with messages and urge to respond to said messages. Barber and Santuzzi created this scale in 2015 ($\alpha = 0.87$). Participants were given these instructions: *For the following*

[2] The chi-square statistic was significant, but this is not unusual and is not necessarily an indication of poor fit as this statistic is influenced by sample size (e.g., Yu, 2002). However, the CFI, TLI, and RMSEA did not meet the thresholds used to indicate good fit. Given the poor fit, I examined modification indices and first allowed the error residual of item 6 ("When I'm given work that I need to finish at home, my organization expects me to let my boss know via electronic communication as soon as it's finished") to correlate with the error residual of item 7 ("If I have important information about work after hours, my organization expects me to electronically communicate it right away") for theoretical reasons, as these items both used very similar language and appear to measure urgency of response, and this also represented the largest modification index. This modification resulted in the following fit indices: χ^2 (13) = 132.35, $p < .01$, CFI = .92, TLI = .87, RMSEA = .18, and SRMR = .05, $\Delta \chi^2(1) = 62.48$, $p < .01$. Upon analyzing the results and finding improved, but not great fit, I next allowed the error residual of item 4 ("My organization expects me to be reachable through electronic communication when I go on vacation") to correlate with the error residual of item 5 ("My organization expects me to check for electronic communications from work when I go on vacation") again for theoretical reasons, as these items both inquired about "vacation" in a similar manner, and this also represented the largest modification. This third analysis yielded the following fit indices: χ^2 (12) = 49.86, $p < .01$, CFI = .97, TLI = .95, RMSEA = .11, and SRMR = .04, $\Delta \chi^2(1) = 85.49$, $p < .01$, which demonstrates good model fit. Although these modifications are not able to be modeled in R for the current analyses, the improvement in fit suggests that follow-up analyses should be conducted with structural regression analyses where such modifications can be modeled.

questions, think about how you use technology to communicate with people ***in your workplace.*** *Specifically think about message-based technologies that allow you to control when you respond (email, text messages, voicemail, etc.). Please rate how much you agree or disagree with the statements.* Example items include: "It's hard for me to focus on other things when I receive a message from someone", and "I feel a strong need to respond to others immediately." As opposed to a measure of general telepressure, I directed participants to respond the statements as they pertain to their *workplace*, consistent with Barber and Santuzzi's (2016) use of workplace telepressure. Response options range from 1 (*Strongly disagree*) to 5 (*Strongly agree).* A single-factor CFA was conducted to assess the internal structure of the six-item telepressure measure. This CFA revealed a model fit with the following indices: χ^2 (9) = 57.53, $p < .01$, CFI = .94, TLI = .90, RMSEA = .14, and SRMR = .04, and the factor loadings for telepressure were all above 0.57, thus indicating questionable fit.[3]

Work-to-family conflict. Within WTFC (α = .91) there are three distinct dimensions, each with three items: time-based (α = .87), strain-based (α = .88), and behavior-based (α = .82) WTFC (Carlson et al., 2000). This particular scale is well validated and has been used previously in the ICT literature (e.g., Ferguson et al., 2016; Ragsdale & Hoover, 2016). Participants were

[3] Given the questionable fit, I examined modification indices and first allowed the error residual of item 4 ("I feel a strong need to respond to others immediately") to correlate with the error residual of item 6 ("It's difficult for me to resist responding to a message right away") for theoretical reasons, as these items both used very similar language and both describe the urge to respond quickly, and this also represented the largest modification index. This modification resulted in the following fit indices: χ^2 (8) = 37.45, $p < .01$, CFI = .96, TLI = .93, RMSEA = .12, and SRMR = .04, $\Delta\chi^2(1) = 20.08$, $p < .01$. Upon analyzing the results, and finding improved but not great fit, I next allowed the error residual of item 1 ("It's hard for me to focus on other things when I receive a message from someone") to correlate with the error residual of item 3 ("I can't stop thinking about a message until I've responded") again for theoretical reasons, as these items both inquired about not being able to focus after receiving a message, and this also represented the largest modification index. This third analysis yielded the following fit indices: χ^2 (7) = 22.85, $p < .01$, CFI = .98, TLI = .96, RMSEA = .09, and SRMR = .03, $\Delta\chi^2(1) = 14.60$, $p < .01$, indicating good model fit. Although these modifications are not able to be modeled in R for the current analyses, the improvement in fit suggests that follow-up analyses should be conducted with structural regression analyses where such modifications can be modeled.

given the following instructions: *Please indicate your level of agreement with the following statements.* Example items include: "My work keeps me from my family activities more than I would like" (time-based); "I am often so emotionally drained when I get home from work that it prevents me from contributing to my family" (strain-based); "Behavior that is effective and necessary for me at work would be counterproductive at home" (behavior-based). Response options range from 1 (*Strongly disagree*) to 5 (*Strongly agree).* A single-factor CFA was conducted and compared with a three-factor model to assess the internal structure of the nine-item work-to-family conflict measure. The single-factor CFA revealed the following fit indices: $\chi^2(27) = 240.47$, $p < .01$, CFI = .86, TLI = .81, RMSEA = .17, SRMR = .08, and all factor loadings were above 0.52, which indicates poor fit.[4] Next, the proposed three-factor model was tested (Carlson et al., 2000). The three-factor CFA revealed the following fit indices: $\chi^2(24) = 39.73$, $p < .05$, CFI = .99, TLI = .98, RMSEA = .05, SRMR = .03, and all factor loadings were above 0.74, indicating excellent model fit. The three-factor model significantly improved the model fit ($\Delta \chi^2(3) = 200.74$, $p < .01$).[5] Given the significantly improved model fit of the three-factor over the one-factor model, I tested the mediation (*hypothesis 3*) with each of the three

[4] Given the poor fit, I examined modification indices and first allowed the error residual of item 8 ("Behavior that is effective and necessary for me at work would be counterproductive at home") to correlate with the error residual of item 9 ("The behaviors I perform that make me effective at work do not help me to be a better parent or spouse") for theoretical reasons, as these items both used very similar language in describing the behavior-based WTFC dimension. This also represented the largest modification index. This modification resulted in the following fit indices: $\chi^2(26) = 170.84$, $p < .01$, CFI = .90, TLI = .87, RMSEA = .14, and SRMR = .07, $\Delta \chi^2(1) = 69.63$, $p < .01$. Upon analyzing the results, and finding improved but not great fit, I next allowed the error residual of item 8 ("Behavior that is effective and necessary for me at work would be counterproductive at home") to correlate with the error residual of item 7 ("The problem-solving behaviors I use in my job are not effective in resolving problems at home") again for theoretical reasons, as these items both similarly describe the behavior-based WTFC. This also represented the largest modification. This third analysis yielded the following fit indices: $\chi^2(25) = 129.64$, $p < .01$, CFI = .93, TLI = .90, RMSEA = .12, and SRMR = .05, $\Delta \chi^2(1) = 41.20$, $p < .01$, which is a significantly improved fit that borderlines on acceptable. Although these modifications are not able to be modeled in R for the current analyses, the improvement in fit suggests that follow-up analyses should be conducted with structural regression analyses where such modifications can be modeled.

[5] The three-factor model also significantly improved fit over the one-factor model with modification indices ($\Delta \chi^2(1) = 89.91$, $p < .01$).

WTFC dimensions separately, while also testing the overall WTFC measure, since it was proposed and hypothesized.

Meaningful work. Meaningful work (Steger et al., 2012) is a ten-item scale that measures how important an individual's work is for their life and life goals (α = .88). Participants were given the following instructions: *Work can mean a lot of different things to different people. The following items ask about how you see the role of work in your own life. Please honestly indicate how true each statement is for you and your work.* Example items include: "I have found a meaningful career", and "I view my work as contributing to my personal growth." Response options range from 1 (*Absolutely untrue*) to 5 (*Absolutely true*). A single-factor CFA was conducted to assess the internal structure of the ten-item meaningful work measure. The single-factor CFA revealed the following fit indices: χ^2 (35) = 101.99, $p < .01$, CFI = **.**96, TLI = .95, RMSEA = .08, SRMR = .04, and factor loadings ranged from 0.70 to 0.82 with the exception of the single reverse-coded item, thus indicating good model fit. The single reverse-coded item demonstrated a factor loading of 0.13. I re-ran the CFA without that reverse coded item, which yielded the following fit indices: χ^2 (27) = 78.13, $p < .01$, CFI = **.**97, TLI = .96, RMSEA = .08, SRMR = .03, and factor loadings ranged from 0.70 to 0.83. Given the poor factor loading of the reverse-coded item, this item was removed for analyses.

Control variables. The following sections detail variables that have been chosen as control measures based on theory and past research. Following the recommendations outlined by Spector and Brannick (2011), these variables may relate to the predictor and outcome variables of interest in this study, thereby providing an alternate explanation for the results. However, they argue that controls should be included in a study only when there is evidence indicating that they should relate to variables being tested. There are two main concerns Spector and Brannick detail:

spuriousness and contamination. Spuriousness occurs when a variable either causes both the independent (X) and dependent variables (Y), meaning that X and Y themselves are not actually causally related, or when a variable acts a mediator of the X-Y relationship. In both cases, X is expected to be a non-significant predictor of Y when the spurious variable is also included in the model. Contamination on the other hand, occurs when a variable influences how constructs of interest are measured (e.g., noisy testing environment, participant fatigue), but doesn't actually impact the constructs themselves. All control variables included in this study were selected because they theoretically could lead to spuriousness. I conducted all analyses both with and without the control variables, as per Spector and Brannick's (2011) recommendation, in order to assess if they should in fact be included.

Demographic and family-related controls. Control items related to demographics and family include gender, marital status, children, and eldercare responsibilities. Prior research suggests that women are higher in agreeableness than men (Costa, Terracciano, & McCrae, 2001). Therefore, women may have a higher desire to please others in the organization, and as a result want to respond to incoming messages quickly, thus experiencing more telepressure. Additionally, while some studies have found no gender differences in experiences of global WFC (e.g., Shockley, Shen, DeNunzio, Arvan, & Knudsen, 2017), a study matching men and women on job industry and employment level found no differences in family demands, but did find that women experienced greater levels of work interfering with family (McElwain, Korabik, & Rosin, 2005), thus indicating that gender may also impact WTFC in addition to telepressure. Response options for gender were dummy coded (*0 = Male, 1 = Female*).

Supervisors who are married or living with their partner should also experience more WTFC (e.g., as opposed to living alone). Additionally, a job may be more meaningful to married

supervisors in the sense that they likely have at least one other person depending on their salary, even if their partner works, as well. This study only examined supervisors, which represents an elevated position in an organization. We did not collect partner information; however, prior research has indicated that employees with partners who have a less successful career tend to work longer hours (e.g., Verbakel, 2010). Therefore, in order to protect their job, married supervisors also likely experience higher levels of telepressure. Following a similar rationale, supervisors with either children or eldercare responsibilities should experience greater WTFC, as children and elders can increase demands at home (e.g., Barling, MacEwen, Kelloway, & Higginbottom, 1994; Voydanoff, 1988. Likewise, parents supporting children or elders have an additional financial burden that makes retaining their job more critical than for someone without those responsibilities. Therefore, these supervisors should also experience higher levels of telepressure. Response options for marital status were dummy coded (*0 = No, 1 = Yes, partnered; Yes, currently married and living with spouse; Yes, currently married but not living with spouse; Yes, currently living with romantic partner; Yes, currently partnered but not living with partner*). Response options for number of children in the household four or more days per week was a numeric response, and response options for eldercare responsibilities were dummy coded (*0 = No, 1 = Yes*)

Work-related controls. Understanding specific work characteristics related to hours worked and job tenure are important because they could lead to spuriousness and provide alternate explanations for feelings of telepressure. First, telepressure has been shown to significantly and positively correlate with both ICT use and workaholism (Barber & Santuzzi, 2015). Therefore, as a supervisor experiences higher levels of telepressure, that individual will likely engage in more work-related ICT use and end up working more hours per week. Longer

working hours has also been shown to relate to increased WTFC (e.g., Byron, 2005; Michel, Kotrba, Mitchelson, Clark, & Baltes, 2011). Response options for hours worked per week was a numeric response.

Additionally, job tenure is important to control for, as potentially both newer and more established supervisors may experience higher levels of telepressure. For example, a newly promoted supervisor may be nervous about performing well and therefore preoccupied with incoming messages and concerned with addressing them in a timely fashion. Alternatively, supervisors who have been in an organization for longer may have more responsibilities that have built up over the years and therefore experience more telepressure due to their status and the reliance others have on them (e.g., Taylor, Audia, & Gupta, 1996). Response options for job tenure was a numeric response.[6]

[6] In an effort to try and better understand relationships between the type of supervisor (i.e., frontline, mid-level, or executive leader) and the variables of interest, I used effects coding and included supervisory level as a control in all analyses. The inclusion of this control variable did not change the significance of any of my findings, so all analyses are reported without this variable.

Analytic Strategy

Data Cleaning and Preliminary Analyses

The data from Qualtrics® were first cleaned and then analyzed. Despite the Qualtrics® selection process, the data were inspected to ensure all eligibility criteria were met. As previously described, a total of 73 participants were excluded from analyses for failing to meet the inclusion criteria. During the cleaning phase, the data were inspected for missing values, discrepancies, and errors. As per the online panel agreement, Qualtrics® excluded unfinished surveys and those less than 75% complete. Upon inspecting the data, very little item missingness was found. The response expectations, telepressure, meaningful work, and work-to-family conflict measures did not have any missing data. However, work-to-family conflict included an "N/A" response option, which was subsequently coded as missing data, resulting in between 2.5-6.5% missing data on those nine items. Given the small amount of missingness, mean imputation was used to handle missing data for measures with at least 75% of the items answered. Of the control variables, only number of children living in the household four or more days per week (6.8%) and job tenure (10.1%) had any missing data. Following Newman's (2014) recommendation, construct-level missingness above 10% of the sample should be addressed; however, this sample did not have construct level missingness above 10%. Newman (2014) recommends that person-level missingness that yields a response rate below 30% should be addressed; however, due to Qualtrics®' screening procedures, there was no person-level missingness beyond that threshold.

Descriptive statistics were calculated in order to initially examine the data for measures of central tendency, variability, and outliers. In order to assess the reliability of the measures,

Cronbach's alpha, which is a measure of internal consistency, was computed for each construct, and confirmatory factor analyses (CFAs) were performed with the statistical software Mplus® Version 8 in order to assess how items load onto each factor (see measures section). Additionally, bivariate correlations were inspected in this initial analysis phase so as to understand correlational relationships among variables. The next step in the data analysis involved assumption checking. Given that the hypothesis tests were based on ordinary least squares regression, the assumptions of linear regression – normality, linearity, homoscedasticity, and independence of errors – were checked by assessing histograms and scatterplots (Bauer, Preacher, & Gil, 2006; Tabachnik & Fidell, 2013). The assumptions of linearity, homoscedasticity, and independence of errors were not violated. Frequency distributions and histograms were used to identify any potential outliers. There were no outliers in any of the main study variables or controls. The meaningful work scale score was negatively skewed. Following Tabachnick and Fidell's (2013) recommendations, meaningful work was reflected and square root transformed. However, this transformation did not impact the significance of analyses, and thus non-transformed measures are reported in all analyses. Lastly, multicollinearity was checked through examination of correlations; however, there was no evidence of multicollinearity. The highest correlation between any pair of independent variables was r = 0.35, and thus the tolerance did not approach 0, indicating no issues with multicollinearity (Tabachnick & Fidell, 2013) (See Table 1).

Hypothesis Testing

Ordinary least squares (OLS) regression analyses were hierarchically performed using the statistical software R in order to assess relationships among response expectations, telepressure, WTFC, and meaningful work. To examine the relationship between response expectations and

telepressure, first control variables were entered into the first step of the regression, followed by response expectations in the second step. The change in R^2 was examined in order to determine the added variance explained by response expectations. The same process, with telepressure substituted for response expectations, was followed to examine the relationship between telepressure and each dimension of WTFC (i.e., time-based, strain-based, and behavior-based).

Direct effects. *Hypothesis 1* was tested by regressing telepressure on organizational response expectations. Similarly, to test *hypothesis 2a-2c*, each dimension of WTFC (i.e., time-based, strain-based, behavior-based) were regressed on telepressure. In accordance with Spector and Brannick's (2011) recommendations, all analyses were conducted with and without control variables; however, there were no substantive differences in the results; therefore, I report all analyses with control variables, as proposed.

Indirect effects. The statistical software, R, was again used in order to test for mediation. To test *hypothesis 3*, which states that telepressure mediates the positive relationship between after-hours organizational response expectations and supervisor WTFC, I first regressed WTFC on response expectations and controls, which yielded the "c" path. Next, I found the "a" path by regressing telepressure on response expectations and controls. Following that, in order to obtain the "b" and "c' " paths, I regressed WTFC on telepressure, response expectations, and controls. In order for mediation to exist, both the "a" (the effect of response expectations on telepressure) and "b" (the effect of telepressure on WTFC controlling for response expectations) paths must be significant (Fritz & Mackinnon, 2007). The indirect path was then calculated by multiplying the "a" and "b" paths together.

Following the calculation of indirect effects, a significance test was conducted. A Sobel Test is one way of assessing significance; however, this test assumes the sampling distribution of

the indirect effect is normal, which is often not the case when the sample size is small. Instead, it is common for the distribution to be positively skewed and leptokurtic, which would make relying on the Sobel Test inappropriate. Bootstrapping, on the other hand, has no assumption of normality, and is recommended when testing for mediation (MacKinnon, Lockwood, & Williams, 2004). In this process, a confidence interval for the indirect effect is created by using resampling with replacement in order to calculate a statistic of interest each time. If the overall confidence interval does not contain zero, we can conclude that mediation has occurred (Fritz & MacKinnon, 2007). I conducted 10,000 bootstrap resamples to ensure confidence in our findings (Wilcox, 2010). As discussed previously, the CFA for the overall WTFC measure demonstrated questionable fit; however, CFAs for each of the three dimensions (i.e., time-based, strain-based, behavior-based WTFC) yielded excellent fit indices. Therefore, this whole process was repeated to test for the mediating effects of telepressure on the relationship between response expectations and time-based WTFC, strain-based WTFC, and behavior-based WTFC.

Moderation. *Hypothesis 4* suggests that meaningful work moderates the positive relationship between organizational response expectations and telepressure. First, response expectations and meaningful work were grand mean centered, such that each had a meaningful 0 point. Then, in order to test this moderation, telepressure was first regressed on the control variables in order to understand the variance explained by the controls. Next, I added the main effects of response expectations to the previous model and observed the change in R^2. Finally, I added the interaction term (i.e., centered response expectations*centered meaningful work) to the second model.

Results

Statistical Analyses

The descriptive statistics and correlations among variables are provided in Table 1. Of note, response expectations were significantly and positively correlated with telepressure as well as WTFC. Telepressure was significantly and positively correlated with the overall WTFC measure as well as each of the three dimensions (i.e., time-based, strain-based, behavior-based). Meaningful work demonstrated a reverse relationship with WTFC and was significantly and negatively correlated with the overall WTFC measure as well as each of the three dimensions (i.e., time-based, strain-based, behavior-based).

Response expectations on telepressure. Tests of the first hypothesis indicate that after-hours organizational response expectations is positively related to supervisor telepressure when controlling for gender, marital status, number of children, eldercare responsibility, job tenure, and hours of work per week (*B* = 0.27, $t(226) = 5.07$, $p < .001$). Therefore, *hypothesis 1* was supported.

Telepressure on work-to-family conflict. As shown in Table 3, results indicate that telepressure is positively related to each of the three dimensions of WTFC when controlling for gender, marital status, number of children, eldercare responsibility, job tenure, and hours of work per week. Specifically, results were significant for time-based WTFC (*B* = 0.50, $t(216) = 6.85$, $p < .001$), strain-based WTFC (*B* = 0.57, $t(218) = 7.75$, $p < .001$), and behavior-based WTFC (*B* = .30, $t(212) = 4.11$, $p < .001$). Therefore, *hypothesis 2a-2c* were supported.

Mediating effects of telepressure. I next tested *hypothesis 3*. In accordance with the necessary requirements for mediation, both the "a" (i.e., effect of telepressure on response

expectations) and "b" (i.e., effect of WTFC on telepressure) paths were significant (*B* = 0.30, *t*(276) = 6.24, *p* < .001) and (*B* = 0.39, *t*(267) = 6.98, *p* < .001). Using 10,000 bootstrap samples, telepressure was found to be a significant partial mediator of the relationship between response expectations and WTFC. The indirect effect (.09) was found to be significant, CI: [.07, .18], with results indicating that 24.3% of the observed effect of response expectations on WTFC was mediated by telepressure. Therefore, *hypothesis 3* was supported.

I also tested each WTFC dimension separately within mediations. First, time-based WTFC was tested as an outcome. Both the "a" and "b" paths were significant (*B* = 0.27, *t*(226) = 7.19, *p* < .001) and (*B* = 0.40, *t*(215) = 5.36, *p* < .001). Using 10,000 bootstrap samples, telepressure was found to be a significant partial mediator of the relationship between response expectations and time-based WTFC. The indirect effect (.11) was found to be significant, CI: [.07, .19], with results indicating that 28.2% of the observed effect of response expectations on time-based WTFC was mediated by telepressure. Next, strain-based WTFC was tested as an outcome. Both the "a" and "b" paths were again significant (*B* = 0.27, *t*(226) = 5.07, *p* < .001) and (*B* = 0.45, *t*(217) = 6.16, *p* < .001). Using 10,000 bootstrap samples, telepressure was found to be a significant partial mediator of the relationship between response expectations and strain-based WTFC. The indirect effect (.12) was found to be significant, CI: [.09, .23], with results indicating that 27.3% of the observed effect of response expectations on strain-based WTFC was mediated by telepressure. Lastly, behavior-based WTFC was tested as an outcome. Again, the "a" and "b" paths were significant (*B* = 0.27, *t*(226) = 5.47, *p* < .001) and (*B* = 0.22, *t*(211) = 2.85, *p* < .01), and a 10,000 bootstrap re-samples indicated that telepressure was a significant partial mediator of the relationship between response expectations and behavior-based WTFC. The indirect effect (.06) was found to be significant, CI: [.03, .14], with results indicating that

20.7% of the observed effect of response expectations on behavior-based WTFC was mediated by telepressure.

Moderating effect of meaningful work. As shown in table 4, the moderation analysis did not reveal a statistically significant interaction term, controlling for gender, marital status, eldercare responsibilities, number of children, hours worked per week, and job tenure. Thus, *hypothesis 4* that meaningful work moderates the relationship between after-hours response expectations and telepressure was not supported.

Discussion

This study tested Kahn and Byosiere's (1992) ISR model by examining telepressure as a linking mechanism between after-hours organizational response expectations and the dimensions of WTFC, as well as the superordinate WTFC measure, within a supervisor sample. The moderating role of meaningful work was also considered. Overall, the majority of the hypotheses were supported. In particular, after hours response expectations was positively related to telepressure, telepressure was positively related to each of the three WTFC dimensions, and telepressure was found to mediate the relationship between response expectations and WTFC. However, there was no empirical support for the moderating role of meaningful work in the response expectations–telepressure relationship. Nevertheless, these findings advance our understanding of telepressure and its nomological network, thereby making important theoretical and practical contributions.

Theoretical Implications

Results of this study have important theoretical implications for telepressure research. Support was not found for *hypothesis 4,* which tested meaningful work as a moderator of the relationship between organizational after-hours response expectations and telepressure. A lack of significant findings for the moderating role of meaningful work could be due in part to the sample characteristics. The sample was entirely comprised of supervisors, who overall reported very high levels of meaningful work ($M = 4.1$, $SD = 0.7$), which may have led to a ceiling effect, as high scores with relatively small variance makes it difficult to determine statistically significant differences (Tabachnick & Fidell, 2012). Of note, the average tenure of supervisors in this sample was 7.6 years ($SD = 4.4$), which may also help explain the high levels of reported

meaningful work. Part of the attraction-selection-attrition model (Schneider, 1987) suggests that individuals are attracted to and select into organizations with which they share certain values and similarities with the organization and employees. Over time, those employees who fit well with the organization are less likely to leave. Therefore, given that the average job tenure was relatively high in this sample, these supervisors may represent individuals who have found a good fit with their work and have been able to craft their job into something that is meaningful to them.

One interesting finding was a statistically significant negative correlation between meaningful work and overall WTFC, as well as all three dimensions of WTFC (overall WTFC: $r = -.25$, $p < .01$; time-based: $r = -.18$, $p < .01$; strain-based: $r = -.30$, $p < .01$; behavior-based: $r = -.16$, $p < .01$). Therefore, depending on the directionality of the relationship, perhaps supervisors who find their work very meaningful perceive less of an incompatibility between their work and home lives than those who find less meaning in their work. Another explanation could be that supervisors who experience more WTFC find less meaning in their work because the work itself makes attending to home life more difficult. This interpretation is in line with previous meaningful work literature that suggests beneficial outcomes related to meaningful work, as opposed to the proposed "dark side". However, more research should be done (e.g., testing the different dimensions of meaningful work, drawing a different sample of employees, using an organizational sample instead of Qualtrics®) before drawing these conclusions.

Although *hypothesis 4* was not supported, evidence for *hypotheses 1-3* was found. Support for three of the four hypotheses indicate that the ISR model may be a useful framework within which to examine telepressure going forward. These hypotheses evaluate the relationships between organizational predictors (i.e., after-hours response expectations) and telepressure;

telepressure and response to the appraisal (i.e., WTFC); as well as the mediating role of the cognitive appraisal in the stressor-strain relationship. These findings also align with previous research in both the ICT and technostress literatures. After-hours response expectations has also been identified as a predictor of after-hours work-related ICT use (Piszczek, 2017), although no similar predictors have been examined in the technostress literature. Additionally, WTFC has been identified as an outcome of both after-hours ICT use (e.g., Ferguson et al., 2016) and technostress (e.g., Ayyagari et al., 2011). However, neither stream of literature has considered the role of meaningful work in relation to either ICT use or technostress.

As described above, support was not found for *hypothesis* 4, which tested meaningful work as a moderator of the relationship between organizational after-hours response expectations and telepressure. Although the characteristics of the sample (i.e., supervisor-only sample) may have contributed to the non-significant findings, consideration should also be given to the framework in which meaningful work was tested. Specifically, the ISR model posits that the moderator of this relationship, a "property of the situation," could also serve as a moderator between the cognitive appraisal of the stressor (i.e., telepressure) and the strain (i.e., WTFC). I thought there was a stronger theoretical argument for testing meaningful work as a moderator of the response expectations–telepressure relationship, but it is conceivable that meaningful work could alternatively moderate the telepressure–WTFC relationship. Therefore, this alternate relationship was also tested as part of supplemental analyses. However, meaningful work also failed to moderate the telepressure–response expectations relationship.[7]

[7] As part of the supplemental analyses the moderation was tested giving consideration to all dimensions of telepressure, meaningful work, and work-to-family conflict (e.g., the personal meaning dimension of meaningful work as a moderator of the relationship between the urge dimension of telepressure and time-based WTFC), which yielded an additional 48 analyses. However, none of these additional analyses yielded significant findings.

Alternatively, lack of support for *hypothesis 4* could also be related to the dimensionality of meaningful work. Meaningful work is comprised of three dimensions, personal meaning in work, meaning making through work, and greater good motivations, but only the superordinate construct was tested, in accordance with Steger et al.'s (2012) use. However, given Kahn and Byosiere's (1992) conceptualization of the moderator as a property of the person, perhaps this relationship would best be tested with each dimension individually. For example, the meaning making through work dimension, which is comprised of items such as, "My work helps me make sense of the work around me," and "My work helps me better understand myself" may fit better with Kahn and Byosiere's (1992) conceptualization of "property of the person" (e.g., more of an enduring characteristic) than the greater good motivation dimension, that is comprised of items such as, "The work I do serves a greater purpose," and "I know my work makes a positive difference in the world" (Steger et al., 2012). These latter items may be more dependent on the particular nature of the job than on individual differences. As part of supplemental analyses, each dimension of meaningful work was examined as a moderator of the response expectations–telepressure relationship. However, none of the individual dimensions of meaningful work significantly moderated the relationship.[8]

Practical Implications

Given that supervisor turnover is more costly than general employee turnover (e.g., Simons & Hinkin, 2001; Tracey & Hinkin, 2008), organizations should be concerned with understanding factors that impact supervisors' perceptions and experiences at work, particularly those that can lead to negative outcomes. The results from this study can help inform

[8] As part of the supplemental analyses each dimension of meaningful work was also examined in relation to each dimension of telepressure in the moderation (e.g., the personal meaning dimension of meaningful work as a moderator of the relationship between response expectations and the urge dimension of telepressure), which yielded an additional nine analyses. However, none of these analyses yielded significant findings.

organizations wishing to retain supervisors. First, support for telepressure acting as a mediator of the after-hours response expectations–WTFC relationship, indicates that organizations trying to limit supervisor telepressure may want to focus attention on decreasing response expectations. As noted in the introduction, global trends have demonstrated an increasing reliance on ICTs that does not appear to be diminishing anytime soon. Therefore, organizations should focus efforts on ways to adapt to this technological reliance, in order to best support both employee wellbeing and organizational success. Focusing efforts on decreasing supervisory after-hours response expectations is fruitful because telepressure has been found to relate to sleep quality, absenteeism, and physical and cognitive burnout (Barber & Santuzzi, 2015), as well as to WTFC, as found in this study. Additionally, research has demonstrated that WTFC relates to psychological strain, anxiety, work satisfaction, burnout, job performance, as well as turnover intentions, which is particularly costly for organizations, as training new supervisors requires more of a financial investment (e.g., Amstad, Meier, Fasel, Elfering, & Semmer, 2011; Simons & Hinkin, 2001; Tracey & Hinkin, 2008). Therefore, as one effort to promote supervisor health and work outcomes, employers should care about addressing predictors of telepressure, including response expectations. After-hours response expectations can be feasibly addressed by organizations through both written policies and trainings specific to supervisors that clearly communicate they are not expected or encouraged to respond to messages after hours or while on vacation, for example. Broadening beyond after work experiences of telepressure, organizations could implement a flagging system within email correspondence whereby only important emails actually requiring an immediate response are flagged.

Another option to convey limited response expectations is to restrict email access after-hours to ensure that supervisors do not have the option of engaging in work email after certain

hours. Some companies such as Volkswagen have tried this approach by restricting work email access after-hours on company-issued devices ("VW turns off", 2011), although it remains unclear if these policies that limit the extent to which one engages with ICTs after hours would also decrease telepressure. For example, it is possible that supervisors who receive messages near the end of the day will be distracted thinking about those messages until the next day, whereas the preoccupation would dissipate faster if allowed to respond at one's convenience.

Given the ubiquitous nature of technology at work, combating the negative effects of telepressure will likely require a multi-pronged approach, in which employees can play an active role as well. Employees may find it useful to only check their email at certain points throughout the day (e.g., twice a day) in order to limit telepressure. Additionally, an effective way to combat the preoccupation related to incoming messages may be to have increased role clarity facilitated by open communication, through which employees can clear up misconceptions related to responding (e.g., understand if they are truly expected to respond after hours), and request for arrangements that will function best with their work-style and home demands (e.g., ask to limit expected response times to certain hours).

Limitations

There are a number of potential limitations of the present study. First, the data collected were cross-sectional, meaning that causality cannot be inferred. Cross-sectional data gives a static picture of relationships, but in order to better test for the proposed mediation implied in the model, a longitudinal design is needed. Such a design would measure the key variables of interest on at least three different occasions (Ployhart & Vandenberg, 2010). Given that cross-sectional data can only demonstrate evidence that variables are related, there is a possibility of reverse causality, meaning that variables hypothesized to be outcomes may actually function as

predictors. For example, WTFC unrelated to incoming messages (e.g., stemming from the need to travel frequently for work), could increase feelings of general anxiety in a supervisor. This strain could then inhibit the supervisor's ability to effectively handle incoming messages, which may lead to preoccupation and rumination over those messages. Additionally, there may be more third variables influencing the proposed relationship that were not included as controls. These additional variables could be environmental factors that are difficult to measure without studying a single organization, such as aspects of the larger organizational culture. However, given prior research and the strong theoretical framework, reverse causality is unlikely in this situation.

Another concern with exclusively using cross-sectional data is the possibility of common method variance, which refers to variance that is due to the method of measurement and is a source of measurement error (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). More specifically, inflated correlations could result because I only surveyed individuals at one point in time and both the predictors and criterion were measured by the same survey. Alternatively, using multiple methods of measurement (e.g., self-report and other report or self-report and objective time stamps of communications), would allow us to see if results converged and eliminate some of that potential bias (Podsakoff et al., 2003). However, as Podsakoff and colleagues (2003) note, common method variance is common within the behavioral sciences, and using one measurement method does not automatically introduce bias (Harrison, McLaughlin, & Coalter, 1996).

The second limitation comes from using an online Qualtrics® panel. Although this type of sampling was most appropriate given the resources available, studying supervisors within an organizational setting would be preferable, as I could have more access to information about the nature of their position and organizational characteristics, such as specific job descriptions and

written policies regarding technology. Additionally, examining dyadic relationships (e.g., between supervisor and subordinates) could help answer additional research questions, as described in-depth below. However, a qualitative study would be best suited for this type of work. Therefore, considering my research questions for this particular study, the Qualtrics® supervisor sample was adequate.

Third, the directions given to participants preceding the telepressure and response expectations scales present limitations. First, the directions for telepressure orient participants towards perceptions of *general* workplace telepressure as opposed to *after-hours* workplace telepressure. As discussed earlier, this decision was made so as to remain consistent with Barber and Santuzzi's (2015) initial validated scale, and to explore the potential impact on home life of telepressure experienced at any time during the day. Conceptually, it makes logical sense that telepressure experienced after work would impact work-home outcomes. However, an additional interesting research question lies in examining workplace telepressure in general, and organizations may be surprised to learn that experiences at work (e.g., preoccupation with emails) can carry past the workday and affect one's home life, as well. Nevertheless, orienting participants towards after-hours telepressure would more closely align with the after-hours response expectation scale. Second, the response expectations scale did not inquire whether these expectations are voluntary or a requirement of the job. For example, some on-call employees may be required to respond quickly after hours. Although the items were intended to be interpreted as voluntary, the wording of the items may be ambiguous to some. Therefore, more precise directions, and perhaps a scale discerning between formal and informal expectations, are needed in order to identify whether formal policies or more informal efforts to change

organizational norms are most effective at mitigating experiences of telepressure. This clarity is important in order recommend the best solutions for organizations.

Lastly, this study would have benefitted from the inclusion of at least three additional measures. The survey did not ask about actual work-related ICT use at home, although Barber and Santuzzi (2015) found that telepressure was related to ICT connectivity behaviors. There is currently no standard measure for this behavior in the literature and most studies have utilized self-created scales (e.g., Diaz et al., 2012; Fenner & Renn, 2010). Nevertheless, inquiring about ICT behaviors (e.g., frequency of use) would help further our understanding of telepressure and its relationship with response expectations, meaningful work, and WTFC. Relatedly, the survey inquired about how many hours per week the individual works but did not differentiate between work hours required by the job and extra hours put in by the employee. However, understanding the extra work individuals put in at their own discretion would help inform our knowledge of meaningful work and WTFC. Lastly, the survey also did not include additional family or spouse outcomes beyond WTFC; however, such information would be valuable. For example, WTFC only captures how aspects of work interfere with the performance in other life roles, yet does not explicitly capture the impact that has on relationships. Given that telepressure leading to ICT use at home can directly impact family members, it would be helpful to measure family or partner characteristics, such as age, and perceptions, such as relationship satisfaction, perceptions of adequate time for family, or parenting behaviors, as well. Taking into account the family life stage (i.e., before children, transition to parenthood, youngest child preschool-age, youngest child school-age, youngest child adolescent, or empty nest) would also be important, as Erikson, Martinengo, and Hill (2010) found that employees in different family life stages differ in their experience of the work-family interface, including perceptions of work-family conflict.

Future Directions

Barber and Santuzzi (2015) indicate that telepressure is a general preoccupation and urge to respond to incoming messages, regardless of the time the message is received (i.e., during or after work hours). Therefore, this study tested the relationship of general telepressure and WTFC. However, future studies should begin to tease out this relationship more by testing both workday telepressure (i.e., directions orienting participants to consider only messages received *during* work hours) and after hours telepressure (i.e., directions orienting participants to consider only messages received *after* work hours). These additional specifications would allow researchers to compare the effects and severity of telepressure experienced during, as opposed to after, the workday on home life (e.g., WTFC). This clarification is important in order to help organizations determine how to best allocate resources to minimize the negative effects of telepressure (e.g., by focusing on trainings to reduce telepressure during the day or only after hours).

Further analysis into organization-related factors would also help clarify our understanding of telepressure in other regards. For example, examining the relationship between telepressure, supervisor level, and the number of individuals above and below the supervisor (i.e., number of people who oversee the supervisor and number of employees the supervisor oversees) might yield insightful results. Although the current study was only focused on the broad category of "supervisors," we did collect some additional information about the type of supervisory position participants occupy. Participants were asked to categorize their position as either: frontline manager, mid-level manager, or executive leader. Using effects coding, supervisory level was entered into all analyses (i.e., tested in all hypotheses), but did not change the significance of any results. However, there was a significant effect for frontline managers on

behavior-based WTFC, such that mid-level managers reported significantly less behavior-based WTFC than frontline managers (b = -0.24, $t(210)$ = -2.46, $p < .05$). Therefore, it would be useful for future studies to more closely assess job titles and responsibilities in regards to these relationships. For example, a supervisor who acts as a liaison between several subordinate employees and a higher-ranking supervisor may feel more telepressure than those supervisors who do not need to coordinate with as many employees.

In a similar vein, a future study should inquire about sources of telepressure by investigating whether messages from different people within an organization (e.g., subordinate versus co-worker) elicit different feelings of telepressure. Although supervisors represent an important working population within which to study telepressure (e.g., due to higher turnover costs), it will also be important to study telepressure in general employees going forward. Perhaps there would be more variance in meaningful work scores among general employees, which could help further explicate the questions surrounding meaningful work discussed earlier. According to 2017 statistics from the Bureau of Labor Statistics, only 11.6% of employees in the U.S. are categorized as working in "management occupations" (BLS, 2017); to make the results more generalizable and meaningful to the workforce as a whole, all levels of employees should be considered in future telepressure studies. These research inquiries would help us better understand whom telepressure most affects, allowing us to identify more targeted solutions.

One interesting finding in this study was a statistically significant negative correlation between WTFC and tenure (r = -.14, $p < .05$), as well as a negative correlation between telepressure and tenure (r = -.10, $p > .05$), although the latter was not significant. Therefore, it would be interesting to examine the nature of this correlation in a predictive study design. For example, it may be that newer supervisors feel more pressure to be responsive to incoming

messages, but once more well established in their roles, no longer experience this preoccupation to as great an extent.

Although this study found significant relationships between telepressure and all dimensions of WTFC, future studies should examine broader work-nonwork outcomes. The WTFC scale includes some items that are specific to families, parents, and spouses; however, as indicated in this survey, these categories are not applicable to all employees.[9] Therefore, to be more inclusive and better understand how telepressure impacts employees outside of work in general, not just at home, broader measures such as work/nonwork interference (Fisher, Bulger, & Smith, 2009) would be useful to examine. Work/nonwork interference is an important outcome to consider because it applies to all employees and has been shown to positively relate to job stress and negatively relate to job satisfaction (Fisher et al., 2009).

Although the ISR model seems to be a useful framework within which to examine telepressure, it may also be worth testing telepressure in different cognitive appraisal models. For example, Beehr and Newman's (1978) model of job stress could help us better understand how perceptions of telepressure and outcomes unfold over time. This approach would be useful in order to identify short-term versus long-term responses to telepressure. Beehr and Newman's (1978) model also takes into account behavioral responses to a stressor. This framework could then also be used to examine if telepressure results in actual ICT use, and when that ICT use happens (i.e., during and/or after work hours). Additionally, telepressure researchers would benefit by drawing more from other disciplines, such as information systems. Technostress research, which has existed for several decades, can serve as a useful resource and help generate new and innovative research questions, potentially linking the two literatures by examining if

[9] The response rate of the option "not applicable" for these items ranged from 2.5-6.5%, depending on the item.

parallels to techno-invasion, techno-complexity, techno-insecurity, and techno-uncertainty, the conditions that predict technostress, also foster telepressure (Tarafdar, Tu, Ragu-Nathan, & Ragu-Nathan, 2007).

Future research should also aim to add methodological rigor to the telepressure literature. For example, the results of this study can be used to inform a longitudinal design with multiple data collections. It would also be useful to employ experience sampling methodology (ESM). An ESM design inquiring about experiences of telepressure and subsequent ICT use throughout the day would help reduce recall bias and yield useful insights into the fluctuations of telepressure over the course of a day and between days (e.g., telepressure may be worse at the beginning of the week than the end). Additional partner or spouse reports should also be included in the ESM design to examine how these compare to the employee's experience.

Conclusion

The present study aimed to identify meaningful predictors and outcomes of telepressure, as well as moderators of the response expectations–telepressure relationship. As technology use, hours at work, and general perceptions of stress continue to rise in the U.S., there is an increasing need to better understand relationships within these categories and pinpoint useful changes organizations can make to ensure a healthier and more productive workforce. Therefore, this study sought to better understand telepressure, particularly when work is meaningful. However, study results do not support the notion of a "dark side" of meaningful work. Nevertheless, findings from this work have important theoretical implications that will further our understanding of telepressure, as well as practical implications that organizations can use to enhance employee wellbeing and work-family outcomes.

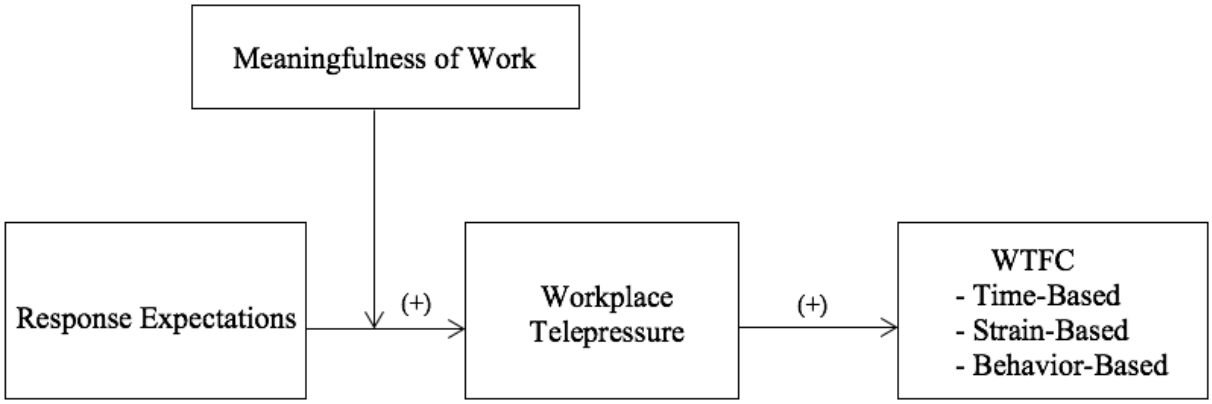

Figure 1. Conceptual Model

Table 1

Descriptive Statistics and Correlations Among Study Variables

Variable	*N*	*M*	*SD*	1	2	3	4	5	6	7
1. Gender	278	0.51	0.50							
2. Marital Status	278	0.65	0.48	0.20**						
3. Number of Children	259	0.93	1.17	0.07	0.34**					
4. Eldercare Responsibility	278	0.35	0.48	0.15*	0.14*	0.13*				
5. Job Tenure (Years)	250	7.58	4.42	-0.05	-0.01	0.01	0.05			
6. Hours of Work/Week	278	42.77	7.93	-0.01	0.03	0.00	-0.02	0.12		
7. Response Expectations	278	3.14	1.13	-0.11	-0.04	0.06	0.04	-0.04	0.07	0.92
8. Telepressure	278	3.24	0.96	-0.06	-0.02	0.08	-0.05	-0.10	-0.04	0.35**
9. Overall WTFC	270	3.04	0.99	-0.08	-0.02	0.04	-0.01	-0.14*	-0.10	0.42**
10. Time-based WTFC	265	3.08	1.18	-0.06	-0.02	0.03	0.02	-0.16*	-0.04	0.37**
11. Strain-based WTFC	269	2.98	1.18	-0.03	0.01	-0.03	-0.07	-0.12	-0.08	0.38**
12. Behavior-based WTFC	260	3.03	1.10	-0.12*	-0.06	0.06	-0.02	-0.07	-0.15*	0.32**
13. Meaningful Work	278	4.09	0.68	0.11	0.07	0.03	0.18**	0.10	0.13*	0.05

Note: WTFC = Work-to-Family Conflict. Gender (0 = Male, 1 = Female); Marital Status (0 = No, not partnered, 1 = Yes, partnered); Eldercare Responsibility (0 = No eldercare responsibilities, 1 = Eldercare responsibilities). Cronbach's alpha reliability coefficients are provided on the diagonals. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 1 Continued

Descriptive Statistics and Correlations Among Study Variables

Variable	8	9	10	11	12	13
1. Gender						
2. Marital Status						
3. Number of Children						
4. Eldercare Responsibility						
5. Job Tenure (Years)						
6. Hours of Work/Week						
7. Response Expectations						
8. Telepressure	0.87					
9. Overall WTFC	0.48**	0.91				
10. Time-Based WTFC	0.43**	0.89**	0.87			
11. Strain-Based WTFC	0.49**	0.90**	0.77**	0.88		
12. Behavior-Based WTFC	0.31**	0.78**	0.50**	0.53**	0.82	
13. Meaningful Work	-0.04	-0.26**	-0.18**	-0.30**	-0.16**	0.88

Note: WTFC = Work-to-Family Conflict. Gender (0 = Male, 1 = Female); Marital Status (0 = No, not partnered, 1 = Yes, partnered); Eldercare Responsibility (0 = No eldercare responsibilities, 1 = Eldercare responsibilities). Cronbach's alpha reliability coefficients are provided on the diagonals.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 2

Effect of Telepressure on Response Expectations

	Telepressure		
Predictor	*B*	*SE B*	ß
Step 1			
Intercept	3.44***	0.37	0.00
Gender	-0.14	0.12	-0.04
Marital Status	-0.08	0.14	-0.01
Number of Children	0.05	0.06	0.04
Eldercare Responsibilities	0.01	0.13	-0.02
Job Tenure (Years)	-0.02	0.01	-0.08
Hours of Work/Week	-0.00	0.01	-0.02
ΔR^2	0.02		
Step 2			
Response Expectations	0.27***	0.05	0.32
ΔR^2	0.10		

Note: Gender (0 = Male, 1 = Female); Marital Status (0 = No, not partnered, 1 = Yes, partnered); Eldercare Responsibility (0 = No eldercare responsibilities, 1 = Eldercare responsibilities).
* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 3

Effect of Telepressure on WTFC

	Outcome								
	Time-Based WTFC			Strain-Based WTFC			Behavior-Based WTFC		
Predictor	*B*	*SE B*	ß	*B*	*SE B*	ß	*B*	*SE B*	ß
Step 1									
Intercept	3.63***	0.44	0.00	3.67***	0.46	0.00	4.10***	0.42	0.00
Gender	-0.22	0.16	-0.07	-0.12	0.16	-0.02	-0.34*	0.15	-0.14
Marital Status	0.01	0.18	0.02	0.14	0.19	0.09	-0.13	0.17	-0.04
Number of Children	0.01	0.07	-0.03	-0.08	0.08	-0.09	0.06	0.07	0.06
Eldercare Responsibility	0.17	0.17	0.08	-0.09	0.17	-0.04	0.06	0.16	0.03
Job Tenure (Years)	-0.04	0.02	-0.12	-0.03	0.02	-0.06	-0.02	0.01	-0.04
Hours of Work/Week	-0.01	0.01	-0.03	-0.01	0.01	-0.06	-0.02	0.01	-0.13
ΔR^2	0.04			0.03			0.05		
Step 2									
Telepressure	0.50***	0.07	0.42	0.57***	0.07	0.46	0.30***	0.07	0.27
ΔR^2	0.18			0.21			0.07		

Note: WTFC = Work-to-family conflict. Gender (0 = Male, 1 = Female); Marital Status (0 = No, not partnered, 1 = Yes, partnered); Eldercare Responsibility (0 = No eldercare, 1 = Yes, eldercare).
*$p < .05$; **$p < .01$; ***$p < .001$.

Table 4

Moderating Effect of Meaningful Work

	Telepressure		
Predictor	*B*	*SE B*	ß
Step 1			
Intercept	3.44***	0.37	0.00
Gender	-0.14	0.13	-0.07
Marital Status	-0.08	0.14	-0.04
Number of Children	0.05	0.06	0.06
Eldercare Responsibility	0.01	0.13	0.01
Job Tenure (Years)	-0.02	0.01	-0.10
Hours of Work/Week	0.01	0.01	0.01
ΔR^2	0.02		
Step 2			
Response Expectations	0.27***	0.05	0.32
Meaningful Work	-0.03	0.09	-0.02
ΔR^2	0.10		
Step 3			
Response Expectations x Meaningful Work	-0.05	0.10	-0.04
ΔR^2	0.00		

Note: Gender (0 = Male, 1 = Female); Marital Status (0 = No, not partnered, 1 = Yes, partnered); Eldercare Responsibility (0 = No eldercare, 1 = Yes, eldercare). Response expectations and meaningful work are both grand mean centered.
* $p < .05$; ** $p < .01$; *** $p < .001$.

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Appendix A: Response Expectation Items

Instructions: *To what extent are the following statements true of you and your situation?*

1. My organization expects me to respond to after-hours electronic work communications immediately.
2. My organization expects me to be available for the organization to contact me in off hours.
3. My organization expects me to watch for incoming electronic communications from work after-hours.
4. My organization expects me to be reachable through electronic communication when I go on vacation.
5. My organization expects me to check for electronic communications from work when I am on vacation.
6. When I'm given work that I need to finish at home, my organization expects me to let my boss know via electronic communication as soon as it's finished.
7. If I have important information about work after hours, my organization expects me to electronically communicate it right away.

Note: Items are rated on a 1-5 scale. 1 *(not at all true),* 2 *(a little bit true),* 3 *(somewhat true),* 4 *(mostly true),* 5 *(completely true)*. Piszczek, 2017.

Appendix B: Telepressure Items

Instructions: *For the following questions, think about how you use technology to communicate with your supervisor **in your workplace.** Specifically think about message-based technologies that allow you to control when you respond (email, text messages, voicemail, etc.). Please rate how much you agree or disagree with the statements.*

When using message-based technology for work purposes . . .

1. It's hard for me to focus on other things when I receive a message from someone. (Preoccupation)
2. I can concentrate better on other tasks once I've responded to my messages. (Preoccupation)
3. I can't stop thinking about a message until I've responded. (Preoccupation)
4. I feel a strong need to respond to others immediately. (Urge)
5. I have an overwhelming feeling to respond right at that moment when I receive a request from someone. (Urge)
6. It's difficult for me to resist responding to a message right away. (Urge)

Note: Items are rated on a 1-5 scale. 1 *(strongly disagree),* 2 *(disagree),* 3 *(neither agree nor disagree),* 4 *(agree),* 5 *(strongly agree)*. Barber & Santuzzi, 2015.

Appendix C: Meaningful Work Items

Instructions: *Work can mean a lot of different things to different people. The following items ask about how you see the role of work in your own life. Please honestly indicate how true each statement is for you and your work*

1. I have found a meaningful career
2. I view my work as contributing to my personal growth.
3. My work really makes no difference to the world.
4. I understand how my work contributes to my life's meaning.
5. I have a good sense of what makes my job meaningful.
6. I know my work makes a positive difference in the world.
7. My work helps me better understand myself.
8. I have discovered work that has a satisfying purpose.
9. My work helps me make sense of the world around me.
10. The work I do serves a greater purpose.

Note: Items are rated on a 1-5 scale. 1 *(absolutely untrue),* 2 *(mostly untrue),* 3 *(neither true nor untrue),* 4 *(mostly true),* 5 *(absolutely true)*. Steger, Dik, & Duffy, 2012.

Appendix D: Work-to-Family Conflict Items

Instructions: *Please indicate your level of agreement with the following statements.*

1. My work keeps me from my family activities more than I would like. (Time-Based WIF)
2. The time I must devote to my job keeps me from participating equally in household responsibilities and activities. (Time-Based WIF)
3. I have to miss family activities due to the amount of time I must spend on work responsibilities. (Time-Based WIF)
4. When I get home from work I am often too frazzled to participate in family activities/responsibilities. (Strain-Based WIF)
5. I am often so emotionally drained when I get home from work that it prevents me from contributing to my family. (Strain-Based WIF)
6. Due to all the pressure at work, sometimes when I come home I am too stressed to do the things I enjoy. (Strain-Based WIF)
7. The problem-solving behaviors I use in my job are not effective in resolving problems at home. (Behavior-Based WIF)
8. Behavior that is effective and necessary for me at work would be counterproductive at home. (Behavior-Based WIF)
9. The behaviors I perform that make me effective at work do not help me to be a better parent and spouse. (Behavior-Based WIF)

Note: Items are rated on a 1-5 scale. 1 *(strongly disagree),* 2 *(disagree),* 3 *(neither agree nor disagree),* 4 *(agree),* 5 *(strongly agree)*. Carlson, Kacmar, & Williams, 2000.

Appendix E: Control Variables

What is your Gender?

0 = Male
1 = Female

Are you currently married or do you have a permanent romantic partner that lives with you?

0 = No
1 = Yes, partnered (Yes, currently married and living with spouse; Yes, currently married but not living with spouse; Yes, currently living with romantic partner; Yes, currently partnered but not living with partner

How many children live in your home 4 or more days per week?

NUMBER

During the past 6 months have you provided at least 3 hours of care per week to an adult inside or outside your home? This could include help with shopping, medical care, or assistance in financial/budget planning.

0 = No
1 = Yes

How long have you worked for your company?

NUMBER

How many hours per week do you work?

NUMBER

Which best describes your current position?

Effects coded and included in supplemental analyses.

- Frontline Manager
- Midline Manager
- Executive Leader