UNEXPECTED WORK INTRUSIONS INTO EMPLOYEES' PERSONAL LIVES: INVESTIGATION, MEASURE DEVELOPMENT, AND EXPLORATION OF CAUSES AND CONSEQUENCES

By

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Abstract

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UNEXPECTED WORK INTRUSIONS INTO EMPLOYEES' PERSONAL LIVES: INVESTIGATION, MEASURE DEVELOPMENT, AND EXPLORATION OF CAUSES AND CONSEQUENCES

by

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The present research explored unplanned work performed during employees' nonwork hours in response to unexpected work intrusions. Three studies were conducted to achieve four goals: 1) better understand the nature of switching from nonwork roles to the work role in response to work intrusions during nonwork hours, 2) help distinguish unplanned role switching from planned role transitions (e.g., bringing work home), 3) develop and validate new episodic measures of work intrusions and three aspects of unplanned nonwork-to-work role switching (frequency, mental difficulty, and physical effort), and 4) begin developing a nomological net of antecedent and outcomes variables surrounding the construct. In Study 1 I conducted employee interviews using the critical incident technique to clarify the nature of unplanned role switching and how it differs from planned role transitions. Analysis of rich qualitative data revealed important characteristics of unplanned role switching that help differentiate it from planned role transitions. The qualitative data also helped in developing episodic measures of work intrusions and unplanned role switching. In Study 2, the new measures were refined based on feedback from subject matters experts and interviewees from Study 1. Study 3 was a repeated measures design in which the refined measures from Study 2 were administered during a 10-day daily study period to assess employees' responses to discrete work intrusions during a typical workweek. Antecedents (individual differences

and job characteristics) and outcomes (work interference with nonwork, burnout, and poor physical health symptoms) were examined using HLM. Results indicated that the antecedents differed for the three aspects of unplanned role switching. However, exploratory results demonstrated the importance of work intrusion characteristics in predicting all three aspects of unplanned role switching. Additionally, Study 3 results underscored the importance of examining intrusions and unplanned role switching, as both were related to negative employee outcomes, such as poor physical health symptoms. Also, the outcomes differed for the three aspects of unplanned role switching, indicating that it is a complex construct with distinct psychological and physical processes. The theoretical and practical implications of these findings are discussed, as well as ideas for future research.

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Chapter 1: Introduction of the Problem

The UN recently reported that 86% of males and 67% of females work more than 40 hours per week ("UN Data," 2012). According to the ILO, U.S. employees work longer hours than any other employees ("ILO Department of Statistics," 2012). Even more alarming is the difficulty in estimating the actual number of hours worked among U.S. employees since so many now work during their personal time (Eldridge & Pabilonia, 2007; Milliken, Dunn-Jensen, Kossek, & Lambert, 2005; Schroeder & Warren, 2004). Given the well-established negative relationship between long work hours and employee health (e.g., Galinsky et al., 2005), additional work hours performed during nonwork time is of particular concern. Employees may choose or plan to work additional hours during their personal time for various reasons (e.g., to keep up with work demands, high levels of work engagement; management of work and personal responsibilities). However, when the additional work is unplanned, it is often due to unpredictable work intrusions into employees' personal lives, such as unexpected emails or telephone calls during the evenings or weekends. The focus of the present research is on unplanned work performed during nonwork hours in response to unexpected work intrusions.

Some employees may try to ignore work intrusions, but others may feel pressure to respond by transitioning from their nonwork roles to the work role (Ashforth, Kreiner, & Fugate, 2000; Burr, 1972). Unplanned work tasks during nonwork hours may prevent adequate recovery from job demands (Sonnentag, Kuttler, & Fritz, 2010), which could negatively impact employees' personal lives and work lives, such as decreasing well-being or reducing work engagement levels (Sonnentag, Binnewies, & Mojza, 2010). Although role transitioning is not a new construct, no studies to date have fully described

or explored the different types of role transitioning, so it is not clear if or how unplanned role transitions differ from planned role transitions. The main objectives of my research were to (1.) better understand the nature of work intrusions and unplanned switching from nonwork roles to the work role during nonwork hours, (2.) determine whether unplanned nonwork-to-work role switching is different from planned nonwork-to-work role transitions (e.g., bringing work home), (3.) develop and test measures of unplanned role switching, and (4.) examine the causes and consequences of unplanned role transitions.

Many employees today have both work and nonwork roles (e.g., employee, parent, neighbor, etc.) within different areas of their lives (e.g., workplace, home, community, etc.), and therefore engage in various types of role transitions. Role transitioning between work and nonwork roles may be: (1.) a planned behavior that occurs when moving between work and nonwork locations (e.g., commuting from home to work), (2.) a planned behavior that occurs while within one location (e.g., a scheduled evening conference call from home), (3.) an unplanned behavior that occurs when moving between work and nonwork locations (e.g., leaving work early to attend to a sick child), or (4.) an unplanned behavior that occurs while in one location (e.g., responding to a late-night e-mail from a boss while at home). Much is known about planned role transitions that occur while moving between work and nonwork locations or while in one location, as there is prior research about these issues (e.g., Voydanoff, 2005). However, my research focuses on unplanned transitioning from nonwork roles to the work role while in a nonwork location (i.e., nonwork-to-work role switching), which typically occurs in response to unexpected work intrusions during employees' personal time.

Work intrusions are largely a result of the increasing interdependence and flexibility of work and nonwork roles (Ashforth et al., 2000; Clark, 2000; Edwards & Rothbard, 2000; Nippert-Eng, 1996). Work intrusions may be triggered externally through technology (e.g., e-mail notifications), or internally, stemming from the individual (e.g., distracted by work-related thoughts). Intrusions may be more likely to occur among employees involved in knowledge-intensive work, which requires complex mental skills (Kelloway & Barling, 2000) and can sometimes be performed in various nonwork locations outside of normal work hours, whereas intrusions are less likely among employees whose work is generally restricted to their traditional work settings, such as manufacturing (Finegold & Frenkel, 2006).

Two critical aspects of unplanned nonwork-to-work role switching are: (1.) transitions between different life roles (i.e., work and nonwork) take place in nonwork locations, and (2.) the unplanned nature of the experience, such that an individual must abruptly change frames of reference, thought patterns, and behaviors in response to a work intrusion (Ashforth et al., 2000). It is the nonwork locations and unplanned nature of these experiences that may prevent employees from adequately detaching from the work role and recovering from job demands during nonwork hours (e.g., Sonnentag, Kuttler, & Fritz, 2010). Abruptly shifting mindsets and behaviors requires mental and/or physical effort, which can potentially deplete employees' personal resources (e.g., energy) and negatively impact their health. This potential for negative employee outcomes warrants a better understanding of unplanned nonwork-to-work role switching.

The focus of the present research was on unplanned nonwork-to-work role switching in nonwork locations for several reasons. First, much less is known about

unplanned role switching than planned role switching. Second, since nonwork boundaries have been shown to be more permeable than work boundaries (Eagle, Miles, & Icenogle, 1997), employees are more likely to perform their work roles while in nonwork locations compared to switching from the work role to a nonwork role while in the workplace (e.g., receiving a telephone call from a child or friend while in the office). Third, unplanned role switching in nonwork locations may negatively impact employees' health.

The main purpose of my research was to build on the construct of role transitioning by exploring and developing a specific type of role transitioning – unplanned nonwork-to-work role switching in nonwork locations during nonwork hours. To achieve this objective I conducted three studies, following the guidelines of Hinkin (1998), Nunnally (1976), and Cronbach and Meehl (1955).

Study 1 was designed to explore and better understand the process of unplanned nonwork-to-work role switching using a qualitative research method of semi-structured employee interviews. Since no prior studies have examined unplanned nonwork-to-work role switching using an interview method, the concept of role transitioning has not been fully developed. The goal of the employee interviews was to uncover any unobservable behavioral, cognitive, and emotional processes that clarify how and why individuals respond to unexpected work intrusions by switching from nonwork roles to the work role. This qualitative research was also intended to facilitate a better understanding of the context of unplanned nonwork-to-work role switching experiences. Characteristics of the unexpected work intrusions that occur while employees are in nonwork locations during their nonwork hours may be important in understanding why employees engage in unplanned nonwork-to-work role switching. For instance, the source of an intrusion (e.g.,

boss) or the type of intrusion (e.g., emergency) may be important factors that lead employees to abruptly switch roles. Thus, a qualitative study could also help identify important contextual variables that may need to be taken into consideration.

It remains unclear whether unplanned nonwork-to-work role switching differs from planned transitions, and, if so, what differentiates these two types of role transitions. By investigating both planned and unplanned role switching, another goal of Study 1 was to determine whether there are any unique behavioral, cognitive, or emotional processes of unplanned role switching that differentiate it from planned role transitions.

Work intrusions and unplanned nonwork-to-work role switching have not been well measured in prior studies, so a third purpose of Study 1 was to develop and validate appropriate measures. Qualitative research is essential to the development of measures that can adequately assess unexpected work intrusions and how individuals respond to intrusions. Learning about work intrusions and the underlying processes of unplanned nonwork-to-work role transitioning is important for ensuring that the construct is well defined and comprehensive. The extant role transitioning research suggests two key aspects of unplanned role switching that should be measured – frequency and difficulty.

The frequency of role transitioning has been measured in some prior studies, but most have either focused on planned role transitions or the total number of transitions that occurred over the past week or month (Bulger, Matthews, & Hoffman, 2007; Matthews, Barnes-Farrell, & Bulger, 2010; Winkel & Clayton, 2010). So it is not clear how often individuals engaged in unplanned role switching by responding to specific work intrusions. The experienced difficulty of role transitioning has only been discussed in theory (Ashforth et al., 2000). It is critical to develop measures to capture the extent of

mental and physical effort required to shift between nonwork and work roles to fully understand the extent to which the transitions are problematic for employees. For example, some employees may switch to their work roles several times during their nonwork hours, but if these unplanned transitions do not require much effort, then there may be minimal negative implications. Alternatively, other individuals may less frequently switch to their work roles during nonwork hours, but if even one experience is difficult for them, then there may be negative consequences.

A general concern with work-life studies is unsophisticated methodology, as data are typically collected with cross-sectional, single source, self-report survey instruments (Casper, Eby, Lockwood, & Lambert, 2007; Eby, Casper, Lockwood, Bordeaux, & Brinley, 2005). Casper et al. (2007) found that a majority of work-life studies were survey-based (85%) and correlational (89%), focusing on the levels of interference between work and nonwork roles, and relationships between these levels and other constructs. Most role transitioning studies have been survey-based and correlational (e.g., Matthews, et al., 2010; Winkel & Clayton, 2009).

Since I expected work intrusions to occur frequently among today's workers, my goal was to develop measures that could assess specific episodes of unplanned nonwork-to-work role switching each day. An episodic approach is a variation of the critical incident technique (CIT; Flanaghan, 1954). A critical incident is an observable human activity that permits inferences and predictions (Flanagan, 1954, p. 327) and is memorable (Kirwan & Ainsworth, 1992) to the individual who experiences it. Although this approach has typically been used to examine the impact of major life events on individuals' stress (e.g., Kanner, Coyne, Schaefer, & Lazarus, 1981), more recent studies

have examined daily events, such as how incidents of stress in the work domain affect personal life (e.g., Butler, Grzywacz, Bass, & Linney, 2005). This approach is appropriate for my research, as distinct work intrusions that occur throughout the day may lead to discrete episodes of unplanned role switching.

Maertz and Boyar (2011) discussed how the "levels" approach facilitates easy data collection, which leads to larger and more representative samples that allow for powerful statistical tests and greater generalizability. In contrast, an episode-based approach can be difficult, invasive, and time-consuming. However, Maertz and Boyar argued that the levels approach is not conducive to studying conflict between work and nonwork roles and causal relationships since conflicts begin at specific times and places and are often addressed in the short-term. Also, conflict levels are imprecise, as data are based on consolidated past episodes of conflict (Williams & Alliger, 1994), rather than discrete episodes. An episode approach helps ensure that a memory of a past conflict is not confounded with a memory of another past conflict.

Powell and Greenhaus (2006) used an episodic approach to examining employees' decisions about conflicting work and personal life events. However, they used a cross-sectional survey to ask participants about a time when they faced a difficult choice between engaging in a work activity or a family activity. My research differs in two ways. First, I focus on the quick decisions individuals make about whether to respond to work intrusions that occur strictly within nonwork domains during nonwork hours. Since I anticipated that participants would experience several intrusions during the one-week period, the context or characteristics of the intrusions were expected to explain some of the within-person variation in unplanned role switching episodes. Therefore, one

advantage to using episodic measures was that variation within individuals could be examined. Second, I planned to design measurement scales that could be used to assess various episodes of unplanned role switching during a typical week via a daily survey. Thus, the main advantage to my episodic approach was the ability to assess work intrusion episodes on the same day that they occurred, rather than rely on retrospective data. These clear advantages make the episodic approach a sound empirical strategy for understanding how employees respond to work intrusions during nonwork hours.

Building on the measures developed in Study 1, Study 2 was designed to refine the measurement scales and ensure that the content domain for unplanned nonwork-to-work role switching was well covered. Specifically, I examined the clarity of the questionnaire instructions and items, the coverage of the measurement items (e.g., items can be mapped back to the conceptual definition), and the applicability and relevance of the items to today's employees. This examination required gathering feedback on my measurement scales from participants who were interviewed in Study 1 as well as from several subject matter experts.

Study 3 was designed to assess the psychometric properties of the refined measurement scales from Study 2. I collected data with my new measurement scales by asking each participant to recount unexpected work intrusion(s) s/he experienced during a one-week period and complete several measures assessing his/her responses to the intrusion(s). I assessed the dimensionality of the new scales, the internal consistency of the measures, and discriminant validity with constructs that are conceptually similar to unplanned nonwork-to-work role switching.

For researchers to learn more about a construct, it is necessary to begin creating a nomological net, which is a set of variables that may be related to the focal construct (Cronbach & Meehl, 1955). Another purpose of Study 3 was to begin developing a nomological net of variables by testing several potential antecedent and outcome variables and their relationships to unplanned role switching. The antecedent (e.g., work role overload) and outcome (e.g., health) variables that were expected to be related to unplanned role switching were derived from theory (Cronbach & Meehl, 1955; Hinkin, 1998), such as boundary management theory (Ashforth et al., 2000). I collected data on the antecedent and outcome variables at separate points in time from when the unplanned role switching data were collected. First I collected data on the proposed antecedents. Next, during a one-week period, I collected episodic data using my newly developed measures. Then a few days after the one-week study period ended, I collected data on the proposed outcome variables.

Rather than relying on single source self-report data, I designed a multi-source study to capture spouses/partners' perceptions of the focal participants' unplanned role switching experiences. It is well known that partners communicate with each other frequently about work and nonwork issues, and past research has shown that couples generally agree in their perceptions of a focal participant's (i.e., employee's) experiences with interactions between work and nonwork domains or roles (Matthews, Del Priore, Acitelli, & Barnes-Farrell, 2006; Streich, Casper, & Salvaggio, 2008). Multi-source data would also enable me to assess the accuracy of the self-report data.

In addition to the new variables that emerged from Study 1's qualitative analysis as potential predictors of antecedents of unplanned role switching, role transitioning

theory and research suggests several antecedents as well. This body of research has viewed individuals as in control of their role transitioning experiences, thus suggesting several individual characteristics that could serve as antecedents. For example, the extent to which one identifies with his/her work role may be related to whether an individual responds to an unexpected work intrusion (Hecht & Allen, 2009). However, job and organizational factors, such as organizational norms, may also play an important role, but have been neglected (Clark, 2002; Kossek, Lautsch, Eaton, & Lambert, 2005). So I investigated whether certain job, organizational, and individual variables were predictive of an individual's decision to engage in unplanned nonwork-to-work role switching in response to a work intrusion.

Perceived overload at work is an example of a job characteristic that I expected to be related to unplanned nonwork-to-work role switching. Many jobs today are demanding, making employees feel overworked and rushed (Steffy & Jones, 1990; Voydanoff, 1988, 2004), especially if they do not have the resources to meet these demands (Jackson & Schuler, 1985; Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1964; Voydanoff, 2004). Employees who feel overloaded at work may try to keep up with their work obligations by switching roles when confronted with work intrusions in nonwork locations (Ashforth et al., 2000; Kahn et al., 1964).

Perceptions of job insecurity (i.e., instability) are particularly relevant during a time of economic recovery, but have not been explored in prior role transitioning studies. Perceived job insecurity may arise from characteristics of both the individual and the work environment. An individual may perceive job insecurity when s/he anticipates or actually experiences an organizational change (e.g., downsizing; Kalimo, Taris, &

Schaufeli, 2003; Taris et al., 2006). Rather than withdrawing from work, insecure employees may increase their work efforts (Brandes et al., 2008; Burton, Holtom, Sablynski, Mitchell, & Lee, 2010). Thus, perceptions of job insecurity may prompt unexpected switches to the work role in response to work intrusions.

Aspects of an organization's culture are organizational characteristics that may be related to unplanned nonwork-to-work role switching. Some organizations and supervisors expect employees to always be accessible during nonwork hours (Major et al., 2007; Thompson, Beauvais, & Lyness, 1999). Thus, working in a time-demanding organization may be associated with frequent work intrusions (Brett & Stroh, 2003; Brown & Ryan, 2003; Dikkers et al., 2007; Kreiner, 2006; Major et al., 2007) and unplanned role switching responses.

Another goal of Study 3 was to understand how unplanned nonwork-to-work role switching affects individuals. When work unexpectedly intrudes into personal life through weak boundaries (Zedeck, 1992b), employees are confronted with competing demands (Kahn et al., 1964). Employees who abruptly switch from nonwork roles to the work role must simultaneously fulfill multiple roles (e.g., employee, spouse, parent, etc.), which can create feelings of conflict between work and nonwork roles (Edwards & Rothbard, 1999; Hecht, 2001). Understanding the outcomes of unplanned role switching can be valuable to practitioners who are concerned with helping employees cope with these unplanned events. My results could inform practitioners about the potential impact of unplanned role switching on employees' personal lives and health, which can ultimately affect work performance.

There may also be negative health implications associated with unexpectedly switching roles. Unplanned role switching episodes may drain personal resources (e.g., energy; Hecht, 2001; Edwards & Rothbard, 2000) and prevent individuals from fully recovering from work demands (Geurts & Sonnentag, 2006; Meijman & Mulder, 1998), which has been linked with poor health (e.g., Von Thiele, Lindfors, & Lundberg, 2006) and burnout (Enzmann, Schaufeli, Janssen, & Rozeman, 1998). Also, prolonged involvement with work tasks may increase negative affect (Thomson, 2006). Indeed, a lack of psychological detachment from work throughout the week predicted negative affective states at the end of the workweek (Sonnentag, Mojza, Binnewies, & Scholl, 2008). Likewise, continual unplanned nonwork-to-work role switching may deplete individuals' personal resources, particularly if the episodes are difficult, which may negatively impact individuals' affect. For instance, individuals may feel distressed after engaging in difficult role switching experiences.

Summary of research goals

Past role transitioning studies have focused on planned transitions or transitions that occur while physically moving between work and nonwork locations. However, both technological advances and the flexibility of many jobs today may be contributing to more frequent unexpected work intrusions into employees' personal lives, especially for those who can behaviorally and/or psychologically perform their work role outside of their traditional work setting during nonwork hours. Thus, there is a critical need to understand employees' experiences with unplanned nonwork-to-work role switching in nonwork locations during nonwork hours. Since this type of role transitioning has not

been adequately explored or measured, the present research was designed to contribute to the work-life scholarly literature and also to have practical utility.

I followed guidelines by suggested by Hinkin (1998), Nunnally (1976), and Cronbach and Meehl (1955) to further develop unplanned nonwork-to-work role switching and create new measures. Study 1 was designed as a qualitative investigation of the underlying behavioral, cognitive, and emotional processes that may explain how and why individuals engage in unplanned nonwork-to-work role switching, as well as the nature of these experiences. Study 1 was also designed to help develop measures of unplanned nonwork-to-work role switching. The main objective of Study 2 was to help ensure that my new measures adequately covered the critical aspects of unplanned nonwork-to-work role switching, including the difficulty and frequency of responses, as well as other relevant factors that emerged from Study 1.

Study 1 and Study 2 were designed to contribute to the work-life scholarly literature by clarifying an important work-life construct. More specifically, these studies were intended to help specify the content domain of unplanned nonwork-to-work role switching and show whether there are critical underlying psychological processes that distinguish it from planned role transitions. Since past measures of unplanned role switching have been weak, Study 1 and Study 2 could also contribute to the work-life scholarly literature by providing more robust measures of an important work-life construct. Two important practical implications of Study 1 and Study 2 are: (1.) providing practitioners with a better understanding of the work intrusions and unplanned role switching episodes that currently confront employees and (2.) developing and refining episodic measures that can be administered in organizations to determine the

prevalence and difficulty of unplanned nonwork-to-work role switching experiences among employees.

Study 3 was designed to examine the psychometric properties of the new scales. These results are needed to determine whether the scales adequately assess the content domain and whether unplanned nonwork-to-work role switching is conceptually distinct from related work-life constructs. Another objective of Study 3 was to begin developing a nomological net of important variables surrounding unplanned nonwork-to-work role switching (Cronbach & Meehl, 1955; Hinkin, 1998) by testing relationships to various potential antecedents and outcomes. Study 3 was also designed to further develop the construct of unplanned nonwork-to-work role switching and build a conceptual model, which could contribute to the work-life scholarly literature. Study 3 was designed to have practical implications as well. The present research can help employers and practitioners understand whether insufficient psychological detachment from work due to frequent work intrusions negatively affects the quality of employees' personal lives, which can ultimately affect critical organizational outcomes (e.g., turnover intentions, job performance). Lastly, my research may be useful to practitioners by clarifying which types of intrusions and unplanned role switching episodes are most problematic for employees, and this understanding may help them to better address the issues.

Overview

The literature review (Chapter 2) is organized according to the three studies. As Study 1's purpose was to explore and develop unplanned nonwork-to-work role switching, I first review the role transitioning literature. This review includes an overview of boundary theories and introduces key concepts and research to help the reader

understand the focal construct. Then I explain how qualitative research can help expand on the construct of role transitioning by uncovering key characteristics of unplanned role transitions. I also discuss how qualitative methodology is useful for generating measures of unplanned nonwork-to-work role switching.

The main objective of Study 2 was to assess how well my new measures cover the content domain of unplanned nonwork-to-work role switching. Accordingly, the second section of the literature review includes a critique of extant role transitioning measures and an explanation of why these measures are not suitable for the present study. Study 3 was designed to assess the psychometric properties of my new scales and test proposed relationships in a nomological net surrounding unplanned role switching. Thus, the third section of the literature review explains and justifies the proposed antecedents and outcomes variables that were tested. I end the literature review with a summary of my research's contributions.

Following the literature review, in Chapter 3 I present the methodology, results, and discussion of findings for Study 1. Chapter 4 covers the methodology and results for Study 2. In Chapter 5, I present the methodology, results, and discussion of findings for Study 3. I conclude with Chapter 6, which is the General Discussion. In this final section I integrate the research findings from each study, present the empirical, theoretical, and practical implications of my research, and discuss the limitations of my research and ideas for future research.

Chapter 2: Literature Review and Hypotheses

Theoretical background: nonwork-to-work role switching and boundary theories

Boundary theory (Clark, 2000; Nippert-Eng, 1996; Zerubavel, 1996) and boundary management theory (Ashforth et al., 2000) provide the theoretical framework for understanding and defining unplanned nonwork-to-work role switching and identifying the potential antecedents and outcomes in its nomological network. These theories explain how the flexible and permeable boundaries surrounding work and nonwork environments may contribute to more frequent and unexpected work intrusions to which employees may respond by switching from nonwork roles to the work role while in nonwork locations. In the following sections I present the origins and development of boundary theories and research on work-nonwork boundaries. The terms "boundary" and "border" are used interchangeably, as past theoretical and empirical work has used both terms. Then I discuss the integration-segmentation model, which is the basis for my conceptual model of how unplanned role switching occurs.

Boundaries and boundary management. The notions of boundaries and domains can be traced back to Lewin's (1951) concept of "life space," which is a psychological environment that an individual lives within. Lewin referred to the different areas of an individual's life space as separate regions differentiated by boundaries. The regions within a life space eventually became known as domains that are associated with different roles. Katz and Kahn (1978) defined roles as the building blocks of social systems and the requirements an individual confronts as a member of such systems. More specifically, individuals perform roles that are based on expectations about behavior for a position in a social structure, and these expectations define the behavioral requirements

or limitations that are ascribed to the role (Rizzo, House, & Lirtzman, 1970). The work domain is associated with various roles such as employee, leader, manager, team member, subordinate, or co-worker. Nonwork domains are associated many roles, such as parent, child, spouse, friend, family member, sibling, community member, or neighbor. Expanding on Lewin's work, Nippert-Eng (1996) defined boundaries as socio-cognitive borders surrounding different domains of categorical content. Similarly, Ashforth et al. (2000) described boundaries as mental fences that surround events, ideas, and people that are related to each other. Clark (2000) used the term borders, rather than boundaries, to depict lines of demarcation between domains that define the point at which domain-relevant behavior begins or ends.

In the following sections I describe the origins of boundary theory and boundary management theory. This discussion explains why work and nonwork domains have different meanings for people, how these different meanings are related to the management of work and nonwork boundaries, and how the management and strength of work and nonwork boundaries are related to unplanned role switching. I also present an overview of prior boundary management research, which explains how and why people create and maintain boundaries.

Origins of boundary theory. Boundary theory is a general cognitive theory of social classification (Zerubavel, 1991, 1996) that focuses on what different social domains (e.g., home and work) mean to individuals (Nippert-Eng, 1996). According to the theory, the firm boundaries surrounding work and nonwork help keep the different domains separated in terms of space, time, people, events, and thoughts. Boundaries can be spatial (i.e., define where domain-relevant behavior takes place), temporal (i.e., define

when a role should be performed) or psychological (i.e., rules that dictate when thinking patterns, behavior patterns, and emotions are appropriate for one domain but not the other). In the past, fixed work and nonwork boundaries indicated to people when work and nonwork roles should begin and end. Boundary theory was appropriate for explaining the realms of work and nonwork at this earlier point in time. However, the relationship between work and nonwork has changed and, accordingly, the ways in which individuals organize these domains has changed as well.

During the industrial revolution, different gender roles were assigned to women and men, with men as the breadwinners (i.e., being paid for work) and women responsible for unpaid domestic tasks (Parsons, 1951). This ideology contributed to the isolation of work and personal life domains, as family members' free domestic labor allowed male laborers to remain at the workplace for long hours. Hence, work and nonwork activities were carried out in different spaces and at different times (Lewin, 1951; Parsons & Bales, 1955), within clear and firm spatial (e.g., buildings) and temporal (e.g., work schedules) boundaries. For instance, a paid job was carried out in a factory during a regular work schedule while nonwork activities were confined to the home during certain hours.

Additionally, work and nonwork activities were associated with different people and different norms for behavior; thus, work and nonwork had distinct cultures that helped keep the domains separated (Lewin, 1951; Morf, 1989; Parsons & Bales, 1955). For example, the work role was carried out in a formal manner with co-workers within a hierarchical structure, whereas home activities were carried out with family members in an informal, relational manner. Aptly, boundary theory and the segmentation model were

used to describe the work and personal lives of employees at this time. Segmentation theory posited that the culturally distinct social realms of work and nonwork could not and did not influence each other, as they were segmented by strong boundaries (Blood & Wolfe, 1960; Dubin, 1973). Thus, the belief at the time was that employees did not play an active role in segmenting their work and nonwork roles, as distinct cultures and rigid boundaries kept the two environments separated, regardless of the extent to which one preferred to keep the domains separated (see Clark, 2000). At this time, transitions between life roles while in nonwork domains (e.g., home) were infrequent, as strong boundaries kept domains segmented and did not allow for much interaction between life roles.

Contrary to the perspective that work and nonwork domains were segmented, evidence of a close, interdependent relationship between work and nonwork domains began to accumulate over time (Burke, Greenglass, Cooper, & Robertson, 1987; Kanter, 1977; Voydanoff, 1987), with Kanter challenging the "myth of separate worlds." This interdependence was stimulated by several societal changes (see Brief & Nord, 1990; Clark, 2000). Men and women's roles shifted, as women increased their participation in the paid labor force (Fullerton, 1995), and fathers increased their involvement at home (Aldous, Mulligan, & Bjarnason, 1998). Since men and women were participating more in other roles while still heavily involved in their traditional roles, researchers became interested in the interdependence between work and nonwork domains (Lewis & Cooper, 1999). Part-time work became more popular as well, especially among women as it allowed them to participate in both work and nonwork roles (Crompton, 1997). Also, as employees started to place greater value on the quality of their lives outside of work,

employers responded by becoming more responsive to and respectful of workers' nonwork roles (Hall & Richter, 1988; Kirchmeyer, 1995; Milliken, Martins, & Morgan, 1998).

In response to workers' increased recognition of and participation in nonwork roles, the availability of telework became more popular ("Bureau of Transportation Statistics," 2003), which has augmented the interdependence between work and nonwork domains. Telework (i.e., telecommuting) is a type of flexible work arrangement in which employees have flexibility over where scheduled work hours are performed, with the setting typically being the home (e.g., Gajendran & Harrison, 2007). It is usually through the use of computer-based technology that employees are able to conduct their scheduled work away from the conventional workplace (Nilles, 1994). A widespread assertion is that telecommuting can help employees balance their work and nonwork demands, thus reducing interference between work and nonwork roles (Gajendran & Harrison, 2007). However, a recent meta-analysis found that telecommuting was not related to conflict between work and nonwork roles (Allen, Johnson, Kiburz, & Shockley, in press).

Beyond telecommuting, the boundaries between work and nonwork also became blurry with the increasing popularity of mobile work. This type of work has been referred to by some researchers as the "hot desk," as employees can perform their work in various nonwork locations (e.g., home, cars, airplanes, trains, gyms, restaurant, hotels, outdoors, etc.) during nonwork hours (e.g., early mornings, late nights, weekends; Lewis & Cooper, 1999; Wikstrom, Palm Linden, & Michelson, 1998). The use of communication technologies in particular, such as cellular telephones, has enabled employees to perform their work anywhere and at any time (Jackson, 2002; Sullivan, 2000). Similar to

telework, since mobile work enables employees to perform their work roles in various nonwork domains and during various times of the day, there may be increased interaction between work and nonwork roles, thus increasing the interdependence of these two domains (Kossek, Lautsch, & Eaton, 2006; Thatcher & Zhu, 2006).

Lastly, with most organizations competing globally, time pressures have also increased among employees (Kanter, 1999). More specifically, in a global context, employees must be available to their supervisors, co-workers, and clients 24/7, in an effort to contend with competitors. This constant availability requires employees to be connected to work when outside of the workplace during nonwork hours, thereby increasing the interdependence between the work and nonwork domains.

These shifts in gender roles, individual values, the nature of work, and organizations have all contributed to a more interdependent relationship between work and nonwork. The once firm boundaries between these domains have become more flexible. In recognition of this interdependency, work-life scholars began to take an open-systems approach to their research, acknowledging that events at work affect other areas of life and vice versa (Katz & Kahn, 1978). For instance, spillover theory posited that emotions and behaviors from one domain could carry over to another domain and affect that domain in a positive or negative manner (Staines, 1980; Zedeck, 1992b). For example, an employee who comes home from work in a bad mood may maintain that bad mood while at home and have an argument with a family member. Traditional boundary theory no longer sufficed in accounting for how the work and nonwork domains were organized. Boundary theory helped explain how and why work and nonwork may mean something different to individuals and how boundaries kept these distinct domains

segmented. However, this theory lacked an explanation for how individuals could modify their boundaries when the meanings of work and nonwork changed for them.

Boundary management theory. Although work and nonwork began to influence each other more, the two culturally different domains were still kept separated by most individuals to avoid conflict (Greenhaus & Beutell, 1985; Hall, 1972) and maintain balance between roles (Wiley, 1987). Some employees reacted to this interdependence with conscious efforts to keep the domains separated through the creation and maintenance of their own psychological boundaries in addition to existing spatial and temporal boundaries (Eckenrode & Gore, 1990; Lambert, 1990; Morf, 1989; Near, Rice, & Hunt, 1980; Piotrkowski, 1979). Recognizing the individual's role in creating and maintaining boundaries prompted the development of boundary management theory. Boundary management theory addresses the ways in which individuals actively create and maintain boundaries to help uphold order in their interdependent work-nonwork lives (Ashforth et al., 2000; Kossek & Ozeki, 1999; Nippert-Eng, 1996).

Flexibility and permeability, defined earlier, play important roles in boundary management, as they are key characteristics that determine boundary strength. Flexible boundaries allow a role to be enacted in various settings and at various times (Beach, 1989; Hall & Richter, 1988; Piotrkowski, 1978; Pleck, 1977; Ritchter, 1992). This enactment can be behavioral (e.g., logging onto a work e-mail account while at home) or psychological (e.g., mentally preparing for a budget meeting while eating dinner at home). In contrast, inflexible boundaries severely constrain when and where a role is behaviorally and/or psychologically enacted. Permeable boundaries allow an individual to be physically located in one domain while psychologically and/or physically involved

in another role (Ashforth et al., 2000; Hall & Richter, 1988; Nippert-Eng, 1996). Conversely, impermeable boundaries prevent involvement in domain-irrelevant roles.

The inflexible and impermeable boundaries that surrounded work and nonwork in the past were largely responsible for the traditional segmentation of work and nonwork domains. As described earlier, work was typically conducted within clear spatial boundaries and rigid temporal boundaries, so it was fairly easy to keep nonwork roles separated from work roles. However, as discussed, the changes in gender roles, individual values, the nature of jobs, and organizations made it more difficult for individuals to maintain boundaries between work and nonwork. In reaction to this, some individuals began creating and managing psychological borders in an attempt to keep the domains segmented and organized in their minds (Rychlak, 1981; Weick, 1979). This more active approach to managing boundaries is known as boundary management work, which is the process of creating, maintaining, and modifying psychological boundaries to organize different domains in a way that makes sense to the individual (Clark, 2000; Clark & Farmer, 1998; Nippert-Eng, 1996). The relationships of boundary flexibility and permeability with unplanned nonwork-to-work role switching will be discussed next.

Boundary management and unplanned role switching. Boundary management research has focused on how people create and maintain boundaries between different life domains. In the past, most people engaged in boundary shaping and maintenance to keep different life domains segmented. The extent to which the cultures of two domains share any meaning is a major determinant of whether an individual may maintain firm boundaries between the domains. Qualitative research investigating the cultural meanings behind work and nonwork domains revealed that while the work and nonwork domains

may have become interdependent over the years, they still have distinct cultures that differ in terms of expected behaviors, rules, and norms (Nippert-Eng, 1996). For instance, individuals reported differences in what behaviors or characteristics are necessary or expected at home and work, with "responsible" and "capable" ranked highest for the work domain, and "loving" and "giving" ranked as most important in the home domain (Clark & Farmer, 1998). As individuals considered work and nonwork to be very different domains, they continued to create and maintain boundaries separating the two worlds.

Even though there may be some general agreement among individuals on the cultural meanings of work and nonwork, there can still be some unique differences in meaning across individuals (Ashforth et al., 2000). Through boundary work, an individual may idiosyncratically construct boundaries based on what roles s/he believes do and do not belong in a particular domain (Douglas, 1975, 1985). In support of this proposition, Nippert-Eng (1996) found that individuals differed in the types of content (e.g., behaviors, thoughts, people) they thought belonged and did not belong to a domain, and the content that was kept or removed from a particular domain differed as well. Therefore, as individuals' meanings of work and nonwork may differ from each other, the degree to which they separate work and nonwork may also differ.

Since the interdependent work and nonwork domains were still considered culturally different, boundary management research focused on how individuals reacted to this interdependency by making conscious efforts to keep the domains separated. Later, research began to address how some individuals may not choose to entirely segment the interdependent domains. Employees who perceive some shared cultural

meaning between work and nonwork roles may choose not to separate the domains (Clark, 2000). The meanings that people attached to work and nonwork started to change and become more similar for reasons discussed earlier. For instance, more workers place great value on their personal lives (Greenhaus & Singh, 2004; Montgomery, Panagopoulou, Peeters, & Schaufeli, 2005), and many organizations today respect employees' personal lives (Morris & Madsen, 2007; Murphy, Zagorski, & Halpern, 2005).

Interdependence coupled with shared meaning between work and nonwork may be associated with less segmentation of work and nonwork domains. Individuals who prefer less segmentation and maintain weaker work-nonwork boundaries may engage in planned nonwork-to-work role switching, such as bringing work home for the weekend. Accordingly, the integration-segmentation model has come to the forefront in the boundary management literature. This model, which underlies Ashforth et al.'s (2000) and Nippert-Eng's (1996) boundary theories, goes beyond segmentation theory by acknowledging that employees may not only actively segment their work and nonwork domains, but may actively integrate these domains as well. The integration-segmentation model also introduces some of the major determinants of unplanned role switching.

Integration-segmentation model. Numerous conceptual models of boundary management have been proposed, including spillover, compensation, accommodation, and resource drain (Edwards & Rothbard, 2000; Kirchmeyer, 1995; Voydanoff, 2002). However, when discussing the process of switching between life roles, the integration-segmentation model provides the best framework (Nippert-Eng, 1996). According to the integration-segmentation model, work and nonwork domains are defined by roles and any

given pair of roles can be arrayed on a continuum, ranging from completely segmented roles at one extreme to entirely integrated roles at the other extreme (Ashforth et al., 2000; Nippert-Eng, 1996). Before further describing integrated and segmented roles, some key concepts underlying the integration-segmentation model need to be presented. Role identity and role contrast are key factors in the degree to which individuals may segment or integrate different life roles.

Role identity is defined as the extent to which a role cues or connotes a certain persona (e.g., goals, values beliefs; Ashforth et al., 2000). As people separate different aspects of themselves and assign these aspects to specific places and times (Nippert-Eng, 1996), distinctions are drawn between who one is at work vs. who one is outside of work. Thus, different role identities are formed – an identity at work and identities outside of work. Contrasted roles tend to be more segmented (Louis & Sutton, 1991). For an individual with a work identity (e.g., corporate lawyer) that differs from his/her home identity (e.g., parent), the work role may require one to be agentic (e.g., independent, assertive, task-oriented) whereas the nonwork role may require nurturing behaviors. Since the work role identity contrasts with the parent role identity, this individual is likely to keep these roles segmented by keeping the work role confined to the office and only certain hours of the day.

As previously mentioned, the flexibility and permeability of boundaries are related to role integration and segmentation (Ashforth et al., 2000; Beach, 1989; Hall & Richter, 1988; Nippert-Eng, 1996; Piotrkowski, 1978; Pleck, 1977; Ritchter, 1992). Together, boundary permeability and flexibility are key determinants of the extent to which someone integrates or segments roles (Clark, 2000). Segmented roles are highly

differentiated (high contrast), tied to specific settings and times (inflexible) and permit few cross-role interruptions (impermeable; Nippert-Eng, 1996). Role segmentors must alternate between two distinct selves (e.g., work self and home self) as they create and maintain inflexible and impermeable boundaries around their domains. An individual can attain greater segmentation by managing and maintaining his or her boundaries (Ashforth, et al., 2000). Individuals with integrated roles (Ashforth, et al., 2000; Nippert-Eng, 1996) have weakly differentiated roles (low contrast) that are not tied to specific places or times (flexible) and allow cross-role interruptions (permeable). There is no distinction or conceptual boundary between what belongs to one domain and what belongs to another domain, as integrators use the same mental framework for both domains.

There are costs and benefits associated with both segmented and integrated roles. The primary benefit of segmented roles is the reduced blurring between roles, as clear symbols, such as specific settings or times for a role, cue the appropriate role identity (Ashforth et al., 2000). When roles are segmented, individuals can easily psychologically compartmentalize their identities and separate their role behaviors, and therefore are less concerned with being distracted by cross role interruptions. Since role segmentors are less likely to be distracted by other roles, they may be less likely to engage in role switching (Ashforth et al., 2000). But the primary cost associated with segmented roles is that when unpredictable role switching occurs, even if infrequent, it may be difficult for individuals to shift gears due to the large cognitive and/or behavioral gap between their roles (Ashforth et al., 2000). Based on this notion, although role segmentation is

associated with little difficulty in creating and maintaining role boundaries, there may be difficulty in having to unexpectedly switch roles even if the shifts are infrequent.

With integrated roles, there is more similarity between roles, role identities tend to be blended, and boundaries are flexible and permeable. Together, these factors may simplify the unplanned role switching process, as there is less of a cognitive and/or behavioral gap between roles (Ashforth et al, 2000; Nippert-Eng, 1996). A primary cost of role integration is role blurring, which occurs as a result of the challenge in psychologically and behaviorally decoupling roles. Although blended roles may make it easy for the individual to disengage from one role in favor of another role, role blurring requires the constant maintenance of boundaries to avoid confusion over when certain roles should be performed (Ashforth et al, 2000; Nippert-Eng, 1996). Integrators must be ready for role disruptions at any time or in any place. Accordingly, employees who blend their work and nonwork roles tend to maintain flexible and permeable boundaries between these domains. These weak boundaries allow work to unexpectedly intrude on personal life, and role integrators are likely to respond by abruptly switching roles.

Most individuals fall somewhere between extreme segmentors and extreme integrators by using both segmenting and integrating practices to create personal arrangements that suit their domain cultures and role identities (Nippert-Eng, 1996). And no matter where individuals are on the continuum, most engage in some kind of boundary work due to today's interdependent work-nonwork worlds (Ashforth et al., 2000). Boundary management theory and the integration-segmentation model make important contributions to the study of role switching. These frameworks suggest that when individuals are confronted with unplanned work intrusions during nonwork hours, role

integrators may abruptly switch roles. Additionally, the integration-segmentation model suggests that the difficulty of unplanned role switching may vary across individuals depending on the extent to which they prefer to integrate work and nonwork roles.

However, the integration-segmentation model does not address other factors beyond the individual that may be related to unplanned role switching. A review by Kossek and others (1999) called for attention to external pressures that may be related to role transitioning, such as job and organizational characteristics. Together, boundary management theory and the integration-segmentation model form the basis for identifying potential job, organizational, and individual antecedents of unplanned role switching. But before reviewing the literature on antecedents, the construct of unplanned role switching requires further attention. As boundary management is still a fairly new area relative to other work-life theories, some constructs are in need of further development. Although the role transitioning construct is not new, no studies to date have fully described or explored the different types of role transitioning. In the next section I review the various forms of role transitioning, highlighting the specific type of role transitioning that is potentially most problematic, and therefore the focus of this research. I also discuss existing role transitioning measures and how I have operationalized unplanned nonwork-to-work role switching in nonwork domains.

Study 1 and Study 2: Defining and measuring role switching

The main purpose of Study 1 was to develop the concept of unplanned nonwork-to-work role switching, as this specific type of role transitioning behavior is relevant to many employees in today's workforce, given their flexible work and nonwork boundaries. One way this objective was achieved was by reviewing the conceptual

research on role transitioning. However, as previously discussed, past research does not sufficiently depict the unpredictable nature of role transitions that occur strictly within nonwork domains today. Therefore, I also used qualitative research methods to better understand the type of role switching that I believe is relevant and challenging for today's workforce. The second purpose of Study 1 was to develop measures of unplanned nonwork-to-work role switching in nonwork domains. In the next section I review existing role transitioning measures to clarify why they are not appropriate or inadequate for assessing role switching as defined in the present research. This section is followed by a discussion of how I proposed to measure unplanned nonwork-to-work role switching in Study 2.

Study 1: defining nonwork-to-work role switching. The role transitioning construct has been included in several work-life theories and models (e.g., role theory, boundary management theory, work-family border theory, and the integration-segmentation model). However, the different types of role switching have been inadequately described and explored. Moreover, the specific type of role transitioning that may be occurring most often today (i.e., unplanned nonwork-to-work role switching) needs to be better conceptualized. Past definitions of role transitioning have generally suggested that it is a formal process that is planned by individuals, neglecting the possibility that some individuals may unexpectedly shift roles due to unplanned work intrusions. Also, very early definitions have described role transitioning as occurring only when physically moving from one life domain to another, such as commuting (Lewin, 1951; Parsons & Bales, 1955). However, some transitions between life roles may occur within a single domain (i.e., home).

Two key aspects that determine the type of role transition are: 1) whether it is a planned or unplanned behavior, and 2) the two life domains (e.g., workplace vs. home) in which the behavior occurs. These two facets lead to four possible types of role transitions: 1) planned role transitions that involve moving between life domains, 2) planned role transitions that occur within one life domain, 3) unplanned role transitions that involve moving between life domains, and 4) unplanned role transitions that occur while remaining in one life domain, such as at home. The fourth type of role transition is relevant to today's workforce given how technological, societal, and organizational changes have shaped the nature of work and jobs today. Unexpected work intrusions may prompt employees to suddenly switch from nonwork roles to the work role while remaining in one nonwork location, such as at home. This type of role transitioning is explored in the following conceptual review.

In addition to inadequate descriptions of the different types of role switching, there are other more minor issues with the role transitioning construct that need to be addressed. Conceptual definitions of role transitioning often describe it as a psychological process involving a shift in mindset (e.g., being distracted by a work-related thought), whereas behavioral transitions (e.g., physically disengaging from one role to engage in another) have received less attention (e.g., Ashforth et al., 2000). Also, definitions have narrowly focused on home or family roles rather than including all nonwork roles (e.g., Clark, 2000). In the following sections I explain each of these conceptual gaps and how I will address these gaps when developing the focal construct.

Role transitioning has traditionally been defined as the process of moving in and out of roles within a social system (Burr, 1972). Even though researchers viewed work

and nonwork as somewhat interdependent at this time, the domains still differed in terms of expected behaviors, rules, and norms. So individuals continued to create and maintain boundaries separating the two worlds. Accordingly, role transitions were thought to occur only between domain-relevant roles (e.g., manager and subordinate) while within one life domain (e.g., workplace). For instance, a manager who facilitates a team meeting and then reports to his/her leader is switching from the leader role to the subordinate role while in the workplace. These role transitions may occur frequently, with the degree of cognitive and behavioral effort required from the individual depending on the roles between which one is transitioning. Later, as work and nonwork became more interdependent and boundaries surrounding these domains weakened, researchers extended the concept of role transitioning, recognizing that individuals psychologically transition between different life roles (e.g., worker and parent) while crossing different domains (e.g., commuting from home to work). These planned role transitions tend to be part of a daily routine, occurring during certain times of the day/week. Also, this planned behavior may require little effort since individuals have sufficient time to shift mindsets while crossing domains (Ashforth et al., 2000).

Over a decade ago, Kossek, Noe, and DeMarr's (Kossek, Noe, & DeMarr, 1999) theoretical work on work-family role synthesis addressed how individuals may be involved in multiple life roles. Work-family role synthesis was described as strategies used to manage the joint enactment of work and family roles. It was more common and more expected for individuals to participate in various work and nonwork roles. As work and nonwork domains became more integrated, workers developed strategies to help better manage their work and family boundaries. The amount of energy and time devoted

to a role (i.e., role embracement) was thought to be related to the extent an individual managed these boundaries (Kossek et al., 1999). Together, work-family synthesis and role embracement explained the degree to which an individual may be involved in both work and family roles. Although Kossek et al. did not specifically address the process of transitioning between work and family roles, it was implied that transitions could occur between different life roles (e.g., parent and worker), not just between domain-specific roles (e.g., parent and spouse), similar to Burr's (1972) line of thinking. Kossek et al.'s research further suggested that the extent to which someone is involved in work and family roles may be related to how frequently s/he transitions between these roles. However, Kossek et al. did not specify whether role transitions occurred while in one domain (e.g., home) and whether transitions were planned or unplanned.

Ashforth et al. (2000) updated and clarified the definition of role transitioning in their seminal theoretical work on boundary management theory. Role transitioning was defined as the psychological movement between roles, including disengagement from one role (i.e., role exit) and engagement in another (i.e., role entry). With boundary management theory as the foundation, Ashforth et al. described role transitioning as a boundary-crossing activity that involves the exiting and entering of roles by surmounting boundaries. Role transitions were categorized into three types: 1) work-home transitions (e.g., commuting from home to work), 2) work-work transitions (e.g., switching from a manager role to a subordinate role), and 3) work-"third place" transitions (e.g., switching from the work role to a nonwork role). Ashforth et al. went beyond the idea of traditional role transitions that occurred between domain-specific roles within one domain (e.g., work-work transitions). They brought attention to transitions that could occur between

roles from different life domains (e.g., work and home) and also acknowledged nonwork domains besides the home (work-"third place" transitions). But it remains unclear whether work-home transitions or work-"third place" transitions could occur while located in one domain (e.g., home), which is important to understand since switching roles while in one life domain may be more difficult than formally switching roles by moving between domains. Moreover, Ashforth et al. did not categorize role transitions as planned or unplanned

Ashforth et al. (2000) did theoretically address both the difficulty and frequency of role transitions, which may vary depending on the type of transition and the strength of domain boundaries. Difficulty refers to the mental and/or behavioral effort required to psychologically or behaviorally disengage from one role to engage in another (Ashforth et al., 2000; Burr, 1972). Transitions between roles with more flexible and permeable (i.e., weaker) boundaries were thought to be less difficult than role transitions between less flexible and permeable (i.e., stronger) boundaries. Work-home transitions and work-third place transitions were considered to be more difficult than work-work transitions, as greater cognitive and/or behavioral effort is needed to cross boundaries. For example, switching from the role of a manager to the role of a spouse may require greater effort than switching from the role of a manager to the role of a work team member. Boundary-crossing activity was thought to occur frequently between domains with flexible and permeable boundaries, and work-work transitions were thought to occur more frequently than any other types of transitions (Ashforth et al., 2000).

Clark (2000) was the first researcher to discuss role transitioning as a process that could occur between different life roles (e.g., worker and spouse) while remaining in one

domain (e.g., home). Clark's (2000) work/family border theory described role transitions as occurring between different life roles (e.g., employee and parent) as a result of flexible and permeable (i.e., weak) work-nonwork boundaries. Individuals who engaged in work and family role transitions were described as "border crossers." She proposed that weak boundaries could allow work to permeate the family domain, and these permeations were thought to be related to role transitions in that domain. But at this time, Clark did not address how difficult it may be for individuals to shift between life roles while in one domain, compared to other types of role transitions. Additionally, researchers continued to view role transitions as predictable, with individual preference to blend work and family roles as the primary reason someone would transition between different roles while in the family domain. So researchers had not yet addressed how the unpredictable nature of nonwork-to-work role transitions may be particularly difficult for individuals.

Later, Clark (2002) tested some of Ashforth et al.'s (2000) theoretical propositions. Based on her results, Clark speculated that individuals might perceive border permeability differently, as the extent to which an individual allows one role to permeate another may not always be a function of individual preference. For some individuals, border permeability may connote the degree to which one is absorbed in that particular area of life, for others it can signify the degree to which one is vulnerable to role interruptions. Clark brought attention to the notion that some individuals may lack control over role disruptions and therefore may have to unexpectedly transition from one role to another. Hence, Clark's later work introduced the idea that individuals may not always be in control of role transitions. In my qualitative analysis of unplanned role switching, I focused on unplanned role transitions that occur in response to unexpected

work intrusions in nonwork domains, rather than role transitions that are planned ahead of time (e.g., planning during the workday to bring work home).

Hecht and Allen (2009) defined boundary permeability as "the extent to which an individual might be psychologically and/or behaviorally engaged in one domain, while physically located in another, or at times that are traditionally devoted to the other" (pp. 840-841). Their conceptualization of boundary permeability does not capture Clark's (2000) notion of unplanned role transitions, but the definition does expand on Ashforth et al.'s (2000) definition. They incorporated the idea that role transitions might occur between different life roles while in one domain and also specified that the process may be psychological or behavioral. The behavioral component is important, as increasingly sophisticated technology allows work to be done at any time of the day and in any location (e.g., Chesley, 2005). Workers may use technology to behaviorally transition from a nonwork role to a work role when outside of the workplace during nonwork hours. Behavioral role switching is especially relevant since many jobs today are part of a global economy that requires 24-hour availability (Kanter, 1999). The psychological component is critical too since the cognitive nature of today's knowledge work enables workers to be psychologically involved in work when outside of the physical workplace during nonwork hours (Ezzedeen & Swiercz, 2007). Thus, I studied both psychological and behavioral role transitions when I explored unplanned nonwork-to-work role switching, as technology and knowledge-work may make it less difficult to switch roles in a nonwork domain, but may increase the likelihood of transitions due to frequent work intrusions.

Matthews et al. (2005) referred to role transitions as inter-domain transitions, defined as the number of physical and cognitive transitions made from one domain to another. Based on Hall and Richter's (1988) premise that the point at which work and nonwork intersect is critical, Matthews et al. described how flexible boundaries determine the degree to which life domains come into contact with one another and result in role transitions. They conceptualized role transitions as the frequency of movement between different life roles and even acknowledged that transitions may be behavioral or cognitive. However, Matthews et al. focused on the individual's ability and/or willingness to transition between roles, overlooking the possibility that unexpected work intrusions may elicit unplanned role switching behavior.

Since individuals can switch to the work role while in various nonwork domains, attention should be paid to different nonwork roles. Prior definitions of role transitioning and related constructs (e.g., boundary strength) have rarely specified the types of roles (e.g., work, nonwork) between which people may shift. When the type of role has been specified, there tends to be a narrow focus on transitions between work and home (or family) roles (e.g., Desrochers, Hilton, & Larwood, 2005). The permeation of work into the home or family domain is certainly important as these intrusions may negatively impact personal life (e.g., Desrochers et al., 2005; Olson-Buchanan & Boswell, 2006). Specifically, these intrusions may contribute to increased difficulty and/or frequency of family-to-work role transitions. However, today's technological, knowledge-based jobs enable workers to behaviorally or psychologically engage in work while in various nonwork roles within various nonwork locations. As previously mentioned, some researchers have addressed how work may permeate "third party" domains (e.g.,

restaurant, hotel, car), defined as any other nonwork domain besides the home, and how transitions may occur between work and third party domains (e.g., Ashforth et al., 2000; Bulger et al., 2007). Thus, when I investigated unplanned role switching in nonwork domains via semi-structured interviews, I acknowledged that individuals may switch from various nonwork roles to work roles.

When examining unplanned nonwork-to-work role switching, it is also important to incorporate a time component. Although it is likely that an employee who is working regularly scheduled work hours at home (e.g., telework) will transition between work and nonwork roles, it is rarely acknowledged that role transitions may involve work that is not part of a normal work schedule (e.g., Voydanoff, 2005). Unplanned role switches in nonwork domains that occur as a result of unexpected work permeations are likely to be disruptive, which may be problematic for employees (Gajendran & Harrison, 2007). One study found that work performed at home outside of normal work hours was positively related to the spillover of negative experiences at work to other areas of life, even after controlling for work demands and the total number of hours worked per week (Grotto & Lyness, 2010). If work performed in a nonwork domain is beyond the normal work schedule, there may be negative consequences for the worker. Thus, my qualitative research focused on unscheduled work performed in nonwork domains during nonwork hours.

I build on the construct of role transitioning by focusing on unplanned nonwork-to-work role switching in nonwork domains, which is expected to be a regular occurrence among employees who can engage in work beyond their physical workplaces and normal work hours, and therefore may experience unplanned role switching in their nonwork

domains. By exploring this type of role transitioning with employees via semi-structured interviews, I sought to understand the critical aspects of unplanned role switching, which can help in developing a conceptual definition that distinguishes it from other types of role transitioning.

The methodology, results, and discussion sections for Study 1 can be found in Chapter 3. Next I discuss the need to develop measures of unplanned nonwork-to-work role switching in nonwork domains since current role transitioning measures do not measure the type of role transitioning that I focus on in my three studies.

Study 2: measurement of nonwork-to-work role switching. Over the past ten years several different measures of role transitioning have been developed and employed. These measures were adequate for measuring role transitioning as it was traditionally defined. However, based on shifting gender roles and the changing nature of work and organizations, unplanned nonwork-to-work role switching in nonwork domains is more aligned with the work-nonwork experiences of many employees today. But this type of role transitioning cannot be adequately assessed with existing role transitioning measures. Even recent role transitioning measures are inadequate, as these measures lack sophistication and do not assess the difficulty of switching from nonwork roles to the work role in response to unexpected work intrusions in nonwork domains. These limitations are discussed in more detail in the following sections.

First it is necessary to distinguish between measures of role transitioning and measures of boundary characteristics. Boundary permeability refers to the extent to which someone allows interruptions from one domain while in another domain. Edwards and Rothbard (1999) assessed employees' desire for work-nonwork permeations by asking

respondents to indicate how much segmentation between work and nonwork was personally acceptable to them. The four characteristics that comprised their desire for segmentation scale were requirements to work while at home (reversed scored), being able to forget work while at home, not having to think about work once leaving the workplace, and not being expected to take work home. Similarly, Kreiner (2006) examined individual preferences for work-nonwork permeations as an indicator of role transitioning. A sample item is, "I don't like to have to think about work when I'm at home." The ability and/or willingness to be physically located in one role while psychologically or behaviorally involved in another role is certainly related to role transitioning, but is not a direct assessment of role transitioning.

In contrast to measures that assess preference or ability to transition between roles, Hecht and Allen's (2009) measure of boundary strength measured how often individuals work during nonwork hours while at home. They claimed that the permeability dimension of boundary strength was most relevant to role transitioning, as permeability reflects the extent to which an individual might be psychologically and/or behaviorally engaged in one domain while physically located in another. Due to a lack of a standard boundary strength measure, Hecht and Allen developed and validated their own measure, which assessed how often an individual performed the work role while outside of the workplace during nonwork hours. However, their approach did not involve a qualitative phase. Instead, some of their measurement items were based on prior measures and the authors wrote other items. Example items are: "I often do work at home," I frequently receive work-related correspondence at home (e.g., e-mail, faxes, or phone calls)," and "I often deal with work-related issues away from work." As is evident

in these sample items, although Hecht and Allen (2009) measured the performance of work during nonwork hours, it was not specified whether the individual planned to perform the work role while at home. Also, although they acknowledged that work may permeate the home domain, they did not assess whether the work permeations were unexpected or how the individuals responded to the permeations. Moreover, the items measured only behavioral involvement, neglecting psychological involvement (e.g., thinking about work while at home). So although this measure is appropriate for assessing the extent to which individuals perform the work role during nonwork hours, it is not adequate for measuring unplanned role switching in response to unexpected work intrusions in nonwork domains.

Clark's (2002) boundary permeability measure assessed involvement in the work role while in nonwork domains. Not only did Clark capture the notion of switching from one role to another (e.g., "I stop in the middle of a nonwork activity to address a work concern"), the results suggested that employees did not necessarily always expect permeations of work into nonwork domains. As discussed earlier, Clark speculated about the different meanings that permeability may have for individuals and noted that some employees may lack control over work interruptions in nonwork domains. However, Clark claimed that this "defenseless invasion" (p. 45) could not be captured in measurement scales.

More recent role transitioning studies have begun to clarify the important distinction between planned and unplanned role transitions. In Bulger et al.'s (2007) examination of boundary permeability (i.e., being physically located in one domain but behaviorally responding to the other domain), they acknowledged that employees may

have little control over when one domain interrupts another, which suggests that individuals may not always be able to predict when they will be involved in the work role while in a nonwork domain. However, their permeability measure is not appropriate for assessing role switching since they only assessed whether work interruptions were experienced (e.g., "My co-workers contacts me while I am at work") rather than how individuals responded to the interruptions. In Grotto & Lyness's (2010) measurement of demands to work at home beyond a normal work schedule, respondents were asked whether their organizations expected them to take work home during nonwork hours and/or days, which captured the notion of being defenseless to work permeations in the home domain. Although their measure did not directly assess how workers responded to unplanned work intrusions at home, their research suggested that some workers may unexpectedly work during nonwork hours due to organizational expectations. So although unplanned role transitioning has been recently addressed, measures have not directly assessed individuals' responses to unexpected work intrusions.

Both the behavioral and psychological nature of role transitioning has been measured, with behavioral indicators being more common than psychological indicators. Measuring job-related technology use during nonwork hours could serve as a good indicator of behavioral role switching in response to work intrusions. For example, communicative technology (e.g., cellular telephones) makes employees vulnerable to work intrusions during nonwork hours even when they may not choose to always be connected. Several researchers have incorporated measures to assess technology use during nonwork hours in their role transitioning measures. Grotto and Lyness (2010) took into consideration the role of technology in working extra hours at home by measuring

job-related use of computers at home. Chesley (2005) measured employees' use of computer-based technology (e.g., e-mail and Internet use) and communications technology (e.g., cell phones and pagers) after work hours. Persistent technology use, defined as regular or frequent use for a period of time, served as an indicator of blurred boundaries between work and nonwork domains. Also, Boswell and Olson-Buchanan (2007) asked respondents to report the frequency of use of an array of technology (e.g., cell phones, e-mail, voice mail, PDAs, and pagers) to perform their jobs during nonwork hours. A new measure could be used to assess the behavioral aspect of unplanned role switching, by asking individuals to report the forms of technology used when switching roles in response to work intrusions in nonwork domains.

Interestingly, although role transitioning has been defined as psychological movement between roles, most measurement scales do not include indicators of psychological movement (Boswell & Olson-Buchanan, 2007; Bulger et al., 2007; Chesley, 2005; Halbesleben & Demerouti, 2005; Hecht & Allen, 2009; Winkel & Clayton, 2010). Although Clark (2002) measured psychological interruptions in the home domain, only one item asked respondents how often they thought about work-related concerns while at home. Due to the knowledge-intensive nature of most jobs today, employees can frequently and easily switch from involvement in nonwork roles to cognitive involvement in the work role during nonwork hours. Moreover, it is not adequate to measure only behavioral transitions since psychological switching may occur without any behavioral switching. In developing my measures of unplanned role switching, I expand on measures of psychological role transitioning by including several items that assess shifting from involvement in a nonwork role to psychological

involvement in the work role while in nonwork domains. For instance, I assessed whether individuals unexpectedly switch from participating in nonwork activities to thinking about work-related concerns.

Extant role transitioning measures typically focus on the frequency of transitions (e.g., Bulger et al., 2007; Matthews et al., 2010; Winkel & Clayton, 2010). But when studying unplanned role transitions, it is also essential to understand the difficulty in having to unexpectedly disengage from a nonwork role to engage in the work role while in a nonwork domain. Limiting measurement to frequency during the past week or month may mask individual differences in these experiences. In particular, the amount of behavioral and/or cognitive effort required to switch to the work role while in a nonwork domain without warning may be critical in understanding the outcomes for employees. For example, an individual may unexpectedly switch from a nonwork role to the work role several times during nonwork hours in one day, but if little effort is required then s/he may not suffer as much negative consequences compared to someone who has more difficulty with frequent unpredictable role switches. Alternatively, even though another person may not frequently switch between roles during nonwork hours, if any one unpredictable role switching episode is particularly difficult then s/he may suffer negative consequences. No study to date has examined the difficulty of unexpected nonwork-to-work role transitions in nonwork domains for individuals, so it is unclear how challenging it is for individuals to engage in this behavior without warning. Furthermore, no studies have examined how individuals respond to various work intrusions that may occur within one day.

Ashforth et al. (2000) noted that role transitions are embedded in a context and suggested that aspects of the context or situation be considered when examining role transitions. Since this is the first study to take a qualitative approach to developing measures of unplanned role switching, it was not clear which contextual variables would be important to measure. The decision to engage in unplanned role switching in response to work intrusions may vary depending on various aspects of the intrusion – the timing (e.g., day of the week, time of day), source (e.g., manager vs. co-worker), and location (e.g., home, car, public space). In terms of timing, employees typically reserve weekends (i.e., Friday evening through Sunday evening, since most employees' normal work schedules are Monday through Friday) for personal activities and opportunities to recover from work demands (Sinacore & Akcali, 2000). So employees may be less likely to experience and/or respond to work intrusions during the weekend compared to weekdays. However, unplanned role switching that occurs on the weekend may be more difficult compared to weekdays. The day of the week may also be important. For instance, unplanned role switching may be more difficult on Friday evenings than on Monday evenings. Additionally, the source of the work intrusion may be relevant, such that employees may be more likely to respond to an intrusion from a manager than a co-worker.

Location may also influence responses to work intrusions, as this is related to the role in which an individual is engaged. Most role transitioning measures, and most work-life measures, assess only the home and family domains when examining experiences outside of the workplace (Clark, 2002; Halbesleben & Demerouti, 2005; Hecht & Allen, 2009; Voydanoff, 2005). However, work intrusions and unplanned role switching can

occur while in various nonwork domains beyond the home and nonwork roles beyond the family. Recent studies have started to measure nonwork roles beyond the family role. Olson-Buchanan and Boswell (2006) asked respondents to report the extent to which they attended to work demands during their personal time, which could include time at home or with one's family but could also include time in other nonwork locations. It is imperative for work-life measures to be more inclusive, as most of today's workers participate in multiple nonwork roles that could be disrupted by work. Unplanned role switching experiences may vary depending on where employees are located and in which roles they are engaged when interrupted by work. For example, it may be more difficult to respond to a work intrusion when it occurs at a friend's home compared to one's own home.

As part of my qualitative investigation of unplanned role switching experiences, I explored the context of each work intrusion episode, including the timing, nonwork location, nonwork activity at the time, and who was present at the time of the intrusion. I also inquired about several characteristics of the work intrusions, including the source (e.g., boss vs. co-worker), type (e.g., telephone vs. email), and nature (e.g., request for help vs. demand) of the intrusion. My goal was to determine whether any contextual variables or intrusion characteristics were important factors in employees' unplanned role switching experiences. For example, perhaps employees are not likely to switch roles in response to work intrusions that occur during the middle of the night or while with a significant other, but they are likely to respond if the intrusion occurs when they are alone or if it is from a boss. I also explored various aspects of the role switching process itself to determine whether other facets were important in addition to frequency and difficulty.

For instance, the time required to switch roles may be related to employees' health outcomes. For example, perhaps longer episodes are related to burnout. Therefore, I also inquired about the length of time each unplanned role switching episode required.

Work-life research has been notorious for limited data collection methods, with many researchers relying on single source, self-report measures at one point in time. In a review, Allen et al. (2000) argued for more sophisticated research designs, specifically calling for more work-life research that incorporates diverse data collection strategies. Similarly, Casper et al.'s (2007) review of work-life research methods called attention to overreliance on cross-sectional designs (Barnett, 1998; Greenhaus, Parasuraman, & Powell, 1999; Zedeck, 1992a), a lack of corroborating evidence (Barnett, 1998; Greenhaus et al., 1999; Parker & Hall, 1992; Swanson, 1992; Zedeck, 1992a; Zedeck & Mosier, 1990) and reliance on self-report, single-source survey data (Barnett, 1998; Greenhaus et al., 1999; Zedeck, 1992a).

Collecting cross-sectional data on employees' unplanned role switching experiences may not be accurate, as it requires individuals to recall a behavior that was not planned and sudden. For instance, although Winkel and Clayton (2010) focused on role transitions that could occur unexpectedly on a daily basis, their measure, based on Matthews and Barnes-Farrell's (2004) measure, was cross-sectional. Collecting role switching data at only one point in time would require respondents to recall experiences that may have unexpectedly occurred several times throughout many nonwork hours over the past week. This method of data collection also does not capture how unplanned role switching episodes may vary within individuals. For example, unplanned role switching may be more difficult in the evening after the work day has ended, than in the morning

before the work day begins. Furthermore, cross-sectional data do not permit causal inferences regarding antecedents and outcomes (Casper et al., 2007). For example, it would be difficult to determine whether interference between work and nonwork roles is a consequence or an antecedent of unplanned role switching. Therefore, I examined unplanned nonwork-to-work role switching episodes during a typical one-week period for employees. Additionally, antecedent data were collected a few days prior to the one-week study period and outcome data were collected a few days after the one-week study period.

Another measurement issue is that the self-report method can be biased due to employees' individual characteristics. For instance, employees' personality traits may influence perceptions of their work-nonwork experiences and therefore may influence self-reports of role switching episodes. According to theory integrating personality with work–life outcomes, individuals with different general dispositions (positive or negative) may interpret the same situation as leading to conflict between work and personal life or as enriching (Friede, Ryan, Kossek, & Lambert, 2005). Negative affect and other negative dispositions (e.g., Type A behavior, neuroticism) have been associated with negative work-life outcomes (e.g., Blanch & Aluja, 2009; Bruck & Allen, 2003; Carlson, 1999; Michel & Clark, 2009; Wayne, Musisca, & Fleeson, 2004). One particular personality trait that may influence reports of unplanned role switching behavior is neuroticism, which is the extent to which an individual exhibits anxiety, insecurity, defensiveness, tension, and worry (Barrick & Mount, 1991; McCrae & John, 1992). Neurotics tend to be preoccupied with role demands (Wayne et al., 2004), which suggests that neuroticism may influence perceptions of work interruptions and experienced

difficulty with unplanned role switching. Individuals high in neuroticism may perceive work interruptions as a threat and become preoccupied with the intrusions. This preoccupation may be associated with over-reporting of unplanned role switching and inflated reports of role switching difficulty.

The experience of a negative event (e.g., argument with a spouse or co-worker) is a stressor that has been positively linked with higher levels of WHI (Byron, 2005; Demerouti, Bakker, & Bulters, 2004; Innstrand, Langballe, Espnes, Falkum, & Aasland, 2008; Peeters, Montgomery, Bakker, & Schaufeli, 2005). Since I planned to collect self-report data in Study 3, it is important to measure daily stressors that may influence individuals' reports of their unplanned role switching episodes. For instance, an argument with a spouse may bias reports of role switching difficulty. Therefore, I examined both neuroticism and daily hassles to help address this possible measurement contamination.

Hinkin (1998) recommended gathering data from sources other than employees to help address common method concerns. Likewise, Casper et al. suggested more dyadic research that examines couples' (e.g., employee and partner) agreement on work-life experiences. Collecting unplanned role switching data from a single source data (i.e., the employee) may contribute to inaccuracies in my estimates of the frequency and difficulty of this behavior. My research conclusions could be strengthened if I collect survey data from two sources and the ratings converge. So to increase confidence in the reliability of single, self-reported data, it may be beneficial to examine the degree to which two members of a dyad agree on a target's (i.e., employee) role switching experiences. Although partner perceptions of a target may be biased and inaccurate as well (Kenny & Acitelli, 2001), previous research suggests that couples generally agree in their

perceptions of each other's work-nonwork experiences. Some work-life researchers have collected data from multiple sources, although these studies were not specifically examining role transitioning. These studies focused on couples' agreement regarding perceptions of their relationships (e.g., extent to which work-family conflict affects a couple's relationship). The findings are relevant to role switching as both processes are dealing with the conflict an employee may experience between work and nonwork roles.

Matthews et al. (2006) examined employees' self-ratings of work-to-relationship conflict as it related to their partners' ratings of the employees' conflict. Each member of the dyad was asked how often in the past year did the demands of their partner's work interfere with their relationship. Self-ratings of work-to-relationship conflict were positively related to partner ratings of the employees' work-to-relationship conflict, suggesting that the partners were capable of interpreting when the targets experienced work-to-relationship conflict, which is in line with previous research (e.g., Jones & Fletcher, 1993). Although this was a single-item measure of a partner's perceptions of work-to-relationship conflict, prior research established the utility of this single-item measure (Matthews, Conger, & Wickrama, 1996). Streich, Casper, and Salvaggio (2008) had participants rate their own work-to-family inference (i.e., WIF) as well as their partner's WIF (e.g., extent to which the job produces strain that makes it difficult to fulfill family duties). Findings revealed that couples agreed on the level of WIF each individual experienced. These studies suggest that multisource data may be useful in studying unplanned role switching. Thus, in addition to collecting self-report data from the employee about his/her unplanned role switching experiences in nonwork domains, I

corroborated this evidence with partner perceptions of the employee's unplanned role switching experiences.

There is a great need in the work-life literature for a more sophisticated and precise measure that can specifically assess the unpredictable nature of switching roles in response to unplanned work intrusions in nonwork domains. I assessed the difficulty and frequency of unexpectedly shifting from various nonwork roles to the work role while in nonwork domains. As previously discussed, data about other dimensions of unplanned role switching, contextual variables, intrusion characteristics, and mood/affect were also collected via interviews and were expected to emerge from my qualitative analysis as important factors to measure. The methodology and results for Study 2 are described in Chapter 4.

In Study 1, I used a qualitative approach to understand the critical aspects that distinguish planned and unplanned nonwork-to-work role switching (see Chapter 3 for the methodology, results, and discussion of findings). By conducting semi-structured interviews, I proposed to learn about how individuals respond to various types of work intrusions. This rich data would help in developing new measures of unplanned nonwork-to-work role switching. Study 2 was designed to develop and content validate my new measures (see Chapter 4 for methodology and results). Study 3 was designed to assess the psychometric properties of my new scales and examine various potential antecedents and outcomes of unplanned nonwork-to-work role switching (see Chapter 5 for methodology, results, and discussion sections). The antecedent variables are reviewed next, followed by a discussion of the proposed outcome variables. Refer to Figure 1 for the proposed

nomological net of variables, including both antecedents and outcomes of unplanned nonwork-to-work role switching.

Study 3: Proposed antecedents of nonwork-to-work role switching

To begin developing a nomological net, I investigated the relationships between unplanned nonwork-to-work role switching and several antecedent variables. Study 3 was designed to test whether various job, organizational, and individual variables serve as antecedents in the nomological network of variables surrounding my focal construct. Boundary management theory and the integration-segmentation model provide the theoretical justification for the proposed antecedents.

A review by Kossek and others (1999) called for attention to other factors beyond the individual that may be related to boundary management. According to Kossek et al.'s (2005) flexibility enactment theory, boundary management strategies are shaped by individual differences as well as the structure of one's job or organization. For instance, although an individual may prefer to segment work and nonwork roles, characteristics or perceptions of one's job or organization may dictate otherwise. Certain job or organizational factors may pressure individuals to weaken their work-nonwork borders and engage in role transitions. By focusing only on individual characteristics, researchers have overlooked the possibility that external pressures may force some individuals to weaken their boundaries and engage in unplanned role switching in response to work intrusions in nonwork domains. Boundary management theory and the integration-segmentation model suggest several job and organizational variables that may be associated with work intrusions and how some individuals may respond to these intrusions by switching from a nonwork role to the work role. Thus, Study 3 included job,

organizational, and individual variables as antecedents of unplanned role switching. This approach is aligned with Barnett's (1998) suggestion to take a holistic view of boundary management by considering both individual characteristics and the nature of the job.

Some researchers have begun to examine external factors in role transitioning studies. Kreiner et al. (2006) explored environmental factors that may influence the strength of work-nonwork boundaries, including workplace pressures. Matthews and Barnes-Farrell (2004) examined how some individuals may not be willing to loosen a border but may be pressured to do so. Although Matthews and Barnes-Farrell drew attention to the notion that some individuals may unwillingly perform work tasks during nonwork hours, they did not explicitly examine which factors may prompt this unplanned behavior, such as job characteristics. A comprehensive examination of job, organizational, and individual antecedents can help in the development of a nomological network of variables surrounding unplanned role switching. Furthermore, the results may inform practitioners on ways to alleviate difficult role switching experiences. First I discuss job and organizational characteristics, followed by individual characteristics.

Perceived work role overload. The first job characteristic to discuss is perceived overload in the work role, which may contribute to unexpected work intrusions and also pressure individuals to switch from nonwork roles to the work role in response to intrusions. According to role stress theory, when role expectations for a particular social system are conflicting, ambiguous, or overloading, the individual experiences role stress (Jackson & Schuler, 1985; Kahn et al., 1964). Particularly relevant to the idea of unplanned role switching, role overload is the extent to which time and resources prove inadequate to meet expectations of commitments and obligations to fulfill a single role.

Employees are most likely to perceive overload in the work role when involved in very demanding jobs. A job is considered demanding when great mental and physical effort must be exerted in order to fulfill job requirements and expectations (Voydanoff, 1988, 2004). As a result of expending this great effort, employees working in demanding jobs typically feel overextended, overworked, rushed to complete work deadlines, unable to meet work requirements without overworking, and short of time to fulfill work obligations (Voydanoff, 2004, 2005). Voydanoff referred to these demanding requirements as strain-based job demands (Galinsky et al, 2001; Voydanoff, 1988, 2004). Based on Voydanoff's work, role stress theory (Kahn et al., 1964), and boundary management theory (Ashforth et al., 2000; Nippert-Eng, 1996), the overload that is often experienced by employees in demanding jobs may contribute to unplanned work intrusions during nonwork hours. Indeed, role overload has been related to the negative spillover of emotions, behaviors, and energy from work to other areas of life (Grotto & Lyness, 2010; Voydanoff, 2004, 2005; Wallace, 1999).

Overloaded employees may be frequently confronted with work intrusions during nonwork hours and may decide to switch roles in an effort to keep up with their work obligations. Work role overload may be particularly problematic for employees involved in knowledge-work, as they can engage in their work role beyond the workplace (Galinsky, Kim, & Bond, 2001; Hewlett & Luce, 2006). For example, jobs that demand 24/7 client service (e.g., accountants with international clients) may contribute to frequent unplanned nonwork intrusions during nonwork hours and these workers may have to switch roles without warning. Unplanned role switching may be especially difficult for

employees who are overloaded at work, as they are expending much of their personal resources, such as time and energy, in the work role. Therefore, I predicted:

> Hypothesis 1a: Work role overload is positively related to unplanned nonwork-to-work role switching responses in nonwork domains. Employees who perceive more work role overload are more likely to respond to work intrusions by switching roles than those who perceive less overload.
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> Hypothesis 1b: Work role overload is positively related to the difficulty of unplanned nonwork-to-work role switching in nonwork domains. Employees who perceive more work role overload experience more role switching difficulty compared to those who perceive less overload.

Job flexibility. Autonomy over how individuals get their jobs done is a job characteristic that has been studied extensively (e.g., Hackman & Oldham, 1980). Many jobs today afford workers new forms of autonomy, as the boundaries surrounding work have become more flexible (Clark, 2000; Hall & Richter, 1988; Pleck, 1977). Spatial boundaries define where work-relevant behavior takes place, and temporal boundaries define when work-relevant behavior can be done. Spatial and temporal work borders have loosened due to increases in knowledge work (Kelloway & Barling, 2000) and technological advancements (Apgar, 1998). So most workers now have more control over the location and timing of their work compared to the past. Accordingly, Kossek et al. (2006) introduced two new forms of job control: control over work locations (place autonomy) and control over work scheduling (time autonomy).

The flexibility of spatial and temporal work boundaries varies, and thus the difficulty and frequency in responding to unplanned work interruptions may vary as well.

Some jobs are surrounded by inflexible boundaries that restrict where and when work can be done. This type of inflexible work primarily characterizes non-exempt jobs. But some exempt, salaried workers are also confined to fixed work schedules and the physical workplace due to nature of their work. For example, nurses are required to work fixed shifts within a hospital and primary education schoolteachers are required to work fixed school day schedules within a school building. Although these workers may perform some planned work-related tasks beyond the workplace (e.g., develop lesson plans at home), they are unlikely to experience unplanned work intrusions during nonwork hours in nonwork domains. However, when they do experience work intrusions, it may be difficult for them to abruptly switch roles due to the inflexible nature of their work.

In contrast, employees working in flexible exempt jobs who may also experience frequent work intrusions may be able to more easily switch to the work in response to unplanned work intrusions during nonwork hours. Some employees today have considerable flexibility in the timing and place of their work (Voydanoff, 1988, 2004). These jobs tend to be knowledge-intensive, allowing workers to be psychologically and/or behaviorally involved in their work while in nonwork domains during nonwork hours. The demanding nature of this type of work (e.g., the 24/7 client service discussed earlier) may contribute to work intrusions during nonwork hours. The flexibility of these jobs may allow employees to frequently and easily respond to these work intrusions. I proposed the following:

> Hypothesis 2a: Job flexibility is positively related to unplanned nonwork-to-work role switching responses in nonwork domains. Employees who perceive their jobs

as more flexible are more likely to respond to intrusion by switching roles compared to those who perceive their jobs as less flexible.

Hypothesis 2b: Job flexibility is negatively related to the difficulty of unplanned nonwork-to-work role switching in nonwork domains. Employees who perceive their jobs as more flexible experience less role switching difficulty than those who perceive their jobs as less flexible.

In addition to the nature of the job, organizational pressures beyond the employee's control may be related to unplanned nonwork-to-work role switching in nonwork domains. For instance, organizational norms may dictate that employees always be accessible to co-workers, managers, and clients (see Rakow & Navarro, 1993; Ventura, 1995). One relevant aspect of an organization's informal work-life culture – organizational time demands – is discussed next as an antecedent of unplanned nonwork-to-work role switching.

Perceived job security. One timely variable that has not been studied as an antecedent of planned role transitioning is perceived job insecurity. Perceived job insecurity may arise from characteristics of both the individual and the work environment. Given the current unstable economy and the recent recession, many employees have first-hand or vicarious experience with organizational changes such as restructuring and downsizing. Accordingly, workers today may be particularly insecure about their jobs. Job insecurity has been defined as an individual's overall concern about the future existence or permanence of a job (Greenhalgh & Rosenblatt, 1984; Hill, 2005), the perception or expectation of a potential threat to job continuity (Pines, Aronson, & Kafry, 1981; Winslow, 2005), and "powerlessness to maintain desired continuity in a

threatened job situation" (Greenhalgh & Rosenblatt, 1984; p. 438). Among the various definitions is the common element of a psychological state in which employees differ in their overall concern about the future job continuity within an organization (Sverke, Hellgren, & Naswall, 2002). Perceived or anticipated organizational changes, such as the likelihood of restructuring or layoffs, have been positively related to job insecurity (Kalimo et al., 2003; Sverke & Hellgren, 2002; Taris et al., 2006). During a past economic recession, 25% of full-time United States workers reported at least "moderate" risk for job loss, relating this risk to the job market and actions taken by companies to manage finances in the economic downturn (Probst, 2003; Probst, Brett, & Drasgow, 2002). These issues related to job loss risk may be relevant for the current economic recession.

Since job insecurity is considered to be a job stressor (Ashford, Lee, & Bobko, 1989; Probst et al., 2002; Sverke et al., 2002), it can have negative outcomes for workers. Indeed, perceived job insecurity has been linked with negative outcomes for employees (e.g., low levels of work effort, job performance, and job satisfaction) and employers (e.g., low levels of organizational commitment, employee absences, and employee turnover; Cheng & Chan, 2008; Sverke et al., 2002). Job insecurity may also elicit negative job-related reactions, such as withdrawal behaviors (see Sverke et al., 2002). However, the relationships of job insecurity with employee attitudes and withdrawal behaviors may be complex given the present economic context (e.g., Brockner, Grover, Reed, & DeWitt, 1992).

Current perceptions of few alternative job opportunities have created an economic need to work. So although employees may feel at risk for job loss, they may not

withdraw. Indeed, in 2009 a majority of respondents reported they were very unlikely to job hunt once the economy improved, an increase from results reported five months earlier that same year, and only 10% reported plans to job search or intensify an existing search when the economy improved ("The continued economic downturn: Employee perspective," 2009). Instead, employees may attempt to alleviate job dissatisfaction associated with job insecurity through various job adaptation responses, according job adaptation theory (O'Laughlin & Bischoff, 2005). Therefore, anticipated organizational changes paired with perceptions of few alternative job opportunities may compel employees to unexpectedly work during nonwork hours in an effort to avoid job loss (Brandes et al., 2008; Brockner et al., 1992).

Beyond anticipation of organizational changes, employees who have actually survived a layoff may feel insecure about their jobs. Layoff survivors tend to experience role stress, defined as “ambiguity, conflict, and overload arising from both characteristics of the individual and the work environment” (Tetrick, Quick, Murphy, & Hurrell, 1992, p. 136). Role stress may result in job insecurity, as survivors feel that their work roles are threatened (Brockner et al., 1992; Greenhalgh & Rosenblatt, 1984; Sverke & Hellgren, 2002). Brockner et al. (2008) found that moderate levels of job insecurity associated with layoffs were associated with more work effort when employees perceived some control over the situation. These findings were underscored recently by Brandes et al. (2008) who found that perceptions of an insecure work environment after a layoff were related to increased work effort. Thus, the threat of job loss may prompt workers to respond to work intrusions and thus engage in more unplanned work tasks during nonwork hours. Layoff survivors also typically absorb extra responsibilities, which results in increased

workloads (see Fong & Kleiner, 2004; Galinsky et al., 2001; Kalimo et al., 2003), which may be associated with frequent work intrusions. Existing literature and the current economic context suggest that perceived job insecurity may be related to unplanned role switching, as employees with feelings of job insecurity may be likely to experience work intrusions and respond by switching roles. Based on the scarce research on the relationship between perceived job insecurity and role transitioning, I proposed the following:

> Hypothesis 3: Perceived job insecurity is positively related to unplanned nonwork-to-work role switching responses in nonwork domains. Employees who perceive more job insecurity are more likely to respond to intrusions by switching roles compared to those who perceive less job insecurity.

Organizational time demands. An organizational culture is formed by the underlying values, beliefs, and norms held by organizational members regarding what is important and what types of behaviors should be rewarded (Denison, 1996; Schein, 1985). Similar to how organizations may value and reward behaviors that promote safety or exemplify great customer service, organizations can also have values, beliefs, and norms regarding the integration-segmentation of work and nonwork roles (Kossek et al., 1999), which may be related to both unexpected work intrusions and workers' unplanned role switching.

Past studies have examined the impact of formal organizational work-life policies on boundary management (e.g., Rothbard, Phillips, & Dumas, 2005). Organizations may differ in the degree to which employees are expected to integrate their work and nonwork roles (Hall & Richter, 1988; Kreiner, 2006). Some organizations may encourage

employees to integrate their roles, whereas other organizations may impose constraints with respect to how much employees can integrate roles (Olson-Buchanan & Boswell, 2006). Some organizations support the integration of work-nonwork roles because this strategy may help employees accomplish more in each role (Gajendran & Harrison, 2007). However, blending work and nonwork roles could become problematic for employees, as they may feel pressured to be available during nonwork hours (Galinsky, Friedman, & Hernandez, 1991). Therefore, this type of organizational work-life culture may enforce the belief among employees that the work role should be pursued at all times. Pressures to respond to unexpected work intrusions may be associated with nonwork-to-work role switching. Conversely, an organization supportive of segmentation may value strong boundaries between work and personal life, and thus employees may not experience many work intrusions, and even if they do, they may not feel pressured to respond (Galinsky et al., 1991).

An organization with a high-performance culture may encourage work-nonwork integration. This type of culture is related to Thompson, Beauvais, and Lyness's (1999) organizational time demands component of perceived organizational work-family culture. This component was described as, "expectations that employees prioritize work above [personal life]" (Thompson et al., 1999; p. 394). These expectations include norms regarding the number of hours worked and use of time. I define organizational time demands as the shared values, beliefs, and norms regarding the extent to which an organization expects or even demands employees' time outside of the workplace and beyond normal work schedules. Employees working in a time-demanding organization are expected to demonstrate commitment to the organization by making work a central

focus of their lives and by working long hours (Bailyn, 1993; Blair-Loy & Wharton, 2002, 2004; Fried, 1998; Schor, 1991). Therefore, unplanned work intrusions during nonwork hours may be a common occurrence for employees working in this type of organization, as employees are pressured to maintain weak boundaries between work and nonwork roles so that they can attend to work demands during nonwork hours (Dikkers et al., 2007). Employees who perceive their organizations as time-demanding and experience frequent work intrusions may often switch from nonwork roles to the work role without any warning.

Qualitative research suggests that some organizations do indeed have norms in place for long work hours (Boswell & Olson-Buchanan, 2007; Brett & Stroh, 2003; Bruck & Allen, 2003; Major, Klein, & Ehrhard, 2002; Perlow, 1997). For instance, many financial companies today have a 24/7 work culture that demands that employees work well beyond their normal business hours (e.g., Schor, 1991). I could not locate any studies examining the relationship between organizational time-demands and role transitioning or related constructs. However, prior research has shown that organizational expectations to work long hours are positively correlated with work hours (Kossek & Ozeki, 1999; Thompson et al., 1999). Time demands may also be related to interference between work and nonwork roles (Frone, Yardley, & Markel, 1997; Parasuraman, Purohit, & Godshalk, 1996) and more perceived imbalance between work and family roles (Perlow, 1998). The evidence of relationships between organizational culture and long work hours on the one hand and role interference on the other hand suggests that a time-demanding organizational work-life culture may be associated with frequent unplanned role switching.

An organization's rules, norms, and values regarding time demands include supervisors' expectations and time demands. As some supervisors have a degree of control over employees' temporal work boundaries (Tausig & Fenwick, 2001), they may also have expectations regarding the number of hours their employees should work. If employees believe that their supervisors demand long work hours, they may be likely to spend more time working (Marks & MacDermid, 1996). Indeed, Major et al. (2007) found that supervisor expectations to work long hours were positively related to work hours. Others studies have examined the extent to which employees' work hours were influenced by supervisor demands to work longer hours (Maume & Bellas, 2001; Schor, 1991). Long work hours were associated with supervisor demands, and these long work hours were manifested as longer workweeks and a propensity to work on the weekends.

Managers' expectations for long work hours may be especially problematic among employees involved in knowledge work (Maume & Bellas, 2001). These employees are engaged in knowledge-work and also have flexible borders that allow them to work during nonwork hours. So supervisors might expect these employees to always be accessible outside of work, pressuring them to respond to work interruptions in their nonwork domains (Chesley, 2006; Galinsky et al., 2001; Schor, 1991) Thus, I proposed the following:

> Hypothesis 4: Organizational time demands is positively related to unplanned nonwork-to-work role switching responses in nonwork domains. Employees who perceive stronger organizational time demands are more likely to respond to intrusions by report switching roles compared to those who perceive weaker demands for their time.

As discussed earlier, in prior work-life literature individuals have generally been viewed as in control of their role transitioning experiences in nonwork domains, with most studies having focused on employees' planned decisions to perform work outside of the workplace and beyond normal work hours (Fenner & Renn, 2004; Kreiner, 2006). Accordingly, prior studies have concentrated on examining a number of individual characteristics as antecedents of this type of role transitioning. Several previously studied individual characteristics may be related to unplanned nonwork-to-work role switching as well, which are discussed next.

Role identification. According to Ashforth et al. (2000), role identification is believed to occur when "a role occupant defines him/herself, at least partly, in terms of the role and its identity" (e.g., I am a student, a wife, and a daughter). An individual who highly identifies with a role closely attaches his/her self-concept to that role, perceiving the role as a defining component of him/herself. The role not only fulfills basic needs (e.g., a job role is important because it serves an economic need), but defines one's existence. Social identity theory posits that individuals desire to behave in ways that are consistent with their identities (Ashforth & Mael, 1989; Shamir, 1991) and are motivated to invest resources (e.g., time) in roles with which they identify strongly (Lobel, 1991). Research on rewards has shown that people gravitate toward and value roles that are extrinsically or intrinsically satisfying (Ashforth et al., 2000; Ashforth, Mael, Kramer, & Neale, 1988). Together, identity theory and rewards research suggest that people may highly identify with rewarding roles and may spend more time in these rewarding roles (Mortimer, 1986). Since a rewarding role is considered a highly valued aspect of oneself

with which one strongly identifies, an individual will be more inclined to engage in the role and invest time and resources in the role (Stryker, 1980).

Based on boundary management theory and the integration-segmentation model, role identification may be associated with how people manage their work-nonwork boundaries, with some individuals strengthening boundaries and others weakening boundaries depending on with which roles they identify (Ashforth et al., 2000). When someone identifies with a role, that role may be integrated or segmented with other roles by strengthening or weakening boundaries (Ashforth et al., 2000). The individual may weaken the boundaries between different roles as a means to invest more resources and be more involved in a particular role while occupying other roles. Conversely, the individual may strengthen boundaries in order to stay more focused on the currently occupied role with which s/he identifies. Role involvement is defined as the degree to which one is cognitively preoccupied with, behaviorally engaged in, or concerned with a role (e.g., parent or manager; Paullay, Alliger, & Stone-Romero, 1994). Individuals may loosen spatial (i.e., physical) and temporal (i.e., timing) boundaries so that they can be more involved in and perform the valued role anytime and anywhere. This behavior could lead to role switching. However, in the context of work intrusions in nonwork domains, boundaries may be weakened or strengthened depending on the role with which the individual identifies, which is explained in the following sections.

Researchers have hypothesized that workers who highly identify with their work roles tend to be psychologically preoccupied with work (Fenner & Renn, 2004; Harpez, 1985). More specifically, the internal motivation to extend the workday by spending more time and effort on work (Fenner & Renn, 2004; Harpez, 1985) results in more

involvement in the work role (Greenhaus & Beutell, 1985). Job (or work) involvement refers to "the degree to which one is cognitively preoccupied with, engaged in, and concerned with one's present job" (Paullay et al., 1994; p. 224). There is evidence of a relationship between work identification and work role involvement. Individuals who identified strongly with work spent more time and effort on work-related activities compared to those whose identification was weaker (Brett & Stroh, 2003; Lobel & St. Clair, 1992; Riketta, 2005). Job involvement has been positively related to work hours (Major et al., 2002; Wallace, 1997) and work effort (Lobel & St. Clair, 1992).

This research suggests that strong work role identification may be associated with flexible and permeable (i.e., weak) work-nonwork boundaries. Indeed, Olson-Buchanan and Boswell (2006) found that work role identification was positively related to the permeation of work into nonwork domains. Boswell and Olson-Buchanan found that employees with higher job involvement were more likely to use communication technologies after work hours to perform work-related activities. Moreover, job involvement has also been positively related to working at home and allowing work intrusions at home (Hecht & Allen, 2009; Major et al., 2002). These findings imply that someone who strongly identifies with work may be willing to perform the work while in nonwork domains even if it is unplanned. Additionally, job involvement research suggests that individuals who strongly identify with their work roles may find it easier to suddenly have to perform the work role since they are motivated and willing to expend effort in that role. Therefore, strong work role identification may be related to unplanned nonwork-to-work role switching in nonwork domains.

An individual who strongly identifies with a nonwork role closely attaches his/her identity to that role (e.g., parent) and thus chooses to be highly involved in that role. People who are highly involved in a personal life role spend more time in that role, as they are cognitively preoccupied with, engaged in, and concerned with the role. This identification may be associated with loosened temporal and spatial borders around nonwork roles. For instance, a worker who strongly identifies with a nonwork role (e.g., parent) may be likely to attend to a parenting issue while in the work role. In support of this notion, Olson-Buchanan and Boswell (2006) found that nonwork role identification was positively related to work permeations in nonwork domains.

These results also suggest that strong identification with a nonwork role may lead to strengthened nonwork borders that can protect nonwork domains from being permeated by work demands. For instance, individuals who are strongly connected to being a parent may ignore work distractions during family time. Indeed, Hecht and Allen (2009) found that individuals who were very involved in their personal lives were less likely to perform the work role while at home or to allow work to invade personal life. This finding suggests that stronger identification with nonwork roles may be associated with less frequent unplanned role switching compared to weaker identification with nonwork roles. Furthermore, involvement in nonwork roles may make it difficult for individuals to unexpectedly switch to the work role, as they must unexpectedly shift resources away from nonwork roles to the work role. Thus, identification with nonwork roles may be associated with difficulty in unplanned nonwork-to-work role switching.

It is important to separately consider both work and nonwork role identification when examining role switching, since work role identification may be independent from

identification with personal life roles. Specifically, identification with nonwork roles does not mean that it is impossible to also identify with the work role. Alternatively, identification with the work role does not discount the possibility of also identifying with nonwork roles. An individual with roles in different life domains (e.g., work and nonwork) may strongly identify with various life roles (Lobel, 1991). For example, working parents may strongly identify with both their work roles and parent roles. Strong identification with the work role could prompt a working parent to switch from the parent role to the work role during nonwork hours. So it is possible for individuals who strongly identify with nonwork roles to engage in unplanned nonwork-to-work role switching in nonwork domains if they also strongly identify with their work roles. I proposed the following:

> Hypothesis 5a: Work role identification is positively related to unplanned nonwork-to-work role switching responses in nonwork domains. Employees who strongly identify with the work role are more likely to respond to intrusions by switching roles than those who identify less strongly with the work role.
>
> Hypothesis 5b: Work role identification is negatively related to the difficulty of unplanned nonwork-to-work role switching in nonwork domains. Employees who strongly identify with the work role experience less role switching difficulty than those who identify less strongly with the work role.
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> Hypothesis 5c: Nonwork role identification is negatively related to unplanned nonwork-to-work role switching responses in nonwork domains. Employees who strongly identify with nonwork roles are less likely to respond to intrusions switching roles than those who identify less strongly with nonwork roles.

Hypothesis 5d: Nonwork role identification is positively related to the difficulty of unplanned nonwork-to-work role switching in nonwork domains. Employees who strongly identify with nonwork roles experience more role switching difficulty than those who identify less strongly with nonwork roles.

Integration boundary management strategy. Related to role identification, a previously studied individual antecedent of role transitioning is preferred boundary management strategy. Individuals differ in the extent to which they prefer to segment versus integrate their work-nonwork boundaries, and thus in the extent to which they create and maintain flexible and permeable work-nonwork boundaries. Kossek et al. (1999) defined boundary management strategy as the principles an individual uses to organize and separate role demands and expectations into specific realms of nonwork (e.g., caring for a child) and work (e.g., performing a job). Boundary preferences are socially constructed, as individuals have a choice in how they prefer to define their boundaries. Individuals have a preferred, and sometimes even an implicit, approach for blending work and nonwork roles that reflects their values and the realities of their lives. It is important to note that when examining *actual* boundary management strategies, there are also factors beyond the individual's choice that determine boundary strength, and thus an *enacted* boundary management strategy may be based on both individual preferences and external pressures. This section focuses on *preferred* boundary management strategies that are under the control of the individual.

As explained in an earlier section, the management of work and nonwork boundaries can be dichotomized into two extreme approaches: integration and segmentation (Ashforth et al., 2000; Nippert-Eng, 1996). Any given pair of work and

nonwork roles can be arrayed on this continuum, ranging from completely segmented roles at one extreme to entirely integrated roles at the other extreme. Individuals who choose a high separation strategy strive to keep work and nonwork roles completely separated (Kossek, Noe, & DeMarr, 1999). Individuals can attain greater segmentation between work and nonwork domains by creating and maintaining strong work-nonwork boundaries that keep work and nonwork roles tied to specific settings (e.g., workplace versus home) and times (e.g., 9:00 – 5:00pm versus evenings and weekends). Segmentors tend to deal with work matters during work time and nonwork matters during nonwork hours, as they prefer to work a full day uninterrupted by personal responsibilities and to enjoy nonwork hours without any work disruptions. For example, role segmentors may not check their work e-mail in the evenings or during weekends. Thus, individuals who prefer segmentation believe that stronger work-nonwork boundaries allow them to preserve and develop their work and nonwork lives more fully (Rothbard et al., 2005).

It is also thought that the separate role identities maintained by role segmentors may buffer employees against the spillover of negative emotions and experiences from one domain to the other (Hewlin, 2003), and help them cope with differing expectations or norms for behavior in the two domains (Edwards & Rothbard 2000; Hall & Richter, 1988). Greater segmentation is also thought to reduce cross-role interruptions, allowing people to focus more exclusively on the salient role (Rothbard et al., 2005). However, when cross-role interruptions do occur, role segmentors may find it difficult to unexpectedly respond to interruptions since they must cross over strong boundaries (Ashforth et al., 2000). Therefore, although role segmentors may not frequently switch roles, unplanned role switching in nonwork domains may be a difficult process for them.

Individuals who prefer an integration strategy conceive of work and nonwork roles as having little or no distinctions in thought, time, or space; therefore, they maintain permeable and flexible work-nonwork boundaries (Ashforth et al., 2000; Rothbard, 2001; Rothbard & Edwards, 2003). The weak work-nonwork borders allow work to be performed while in a nonwork domain, as it is not tied to a specific place or time (Nippert-Eng, 1996). These individuals often informally restructure their work schedules resulting in a blending of their work and nonwork demands. For example, some employees may work from home certain days of the week in order to help fulfill some nonwork responsibilities. Integrators may plan to bring work home or inform co-workers, supervisors or clients that it is acceptable to call them after work hours (Ashforth, et al., 2000; Nippert-Eng, 1996). Individuals who prefer integrated roles believe that weaker boundaries allow them to accommodate and cope with multiple role demands (Nipper-Eng, 1996). Based on these premises, role integrators may frequently engage in unplanned role switching in nonwork domains, and this unexpected boundary-crossing activity may be easy for them since they tend to maintain weak boundaries (Ashforth et al., 2000).

Prior research has found that individuals vary in their preferences for segmenting or integrating work and nonwork roles (Edwards & Rothbard, 1999; Nippert-Eng, 1996). Some researchers have proposed that individual characteristics can serve as indicators of an individual's preferred strategy. For example, Kossek et al. (1999) proposed that employees with family members who can assist them with their childcare were more likely to prefer segmentation between work and nonwork roles compared to those without

assistance from family members. Kossek et al. also hypothesized that individuals with high levels of conscientiousness prefer an integration strategy.

Studies have also examined enacted (rather than preferred) boundary management strategies in relation to boundary permeability, boundary strength, and role transitioning (e.g., Nippert-Eng, 1996). Desrochers, Hilton, and Larwood (2005) found that the integration of work and family, as indicated by the reported lack of clear boundaries between work and family roles, was associated with working more hours at home and a greater number of transitions between work and family roles. Bulger et al. (2007) found that integrated work and nonwork domains were associated with more work permeations into nonwork domains whereas segmented domains were associated with fewer work permeations into nonwork domains.

Rothbard et al. (2005) argued that many researchers have assumed that integration-segmentation preferences are aligned with enacted strategies. Preference for and enactment of boundary management strategies should be decoupled since the constructs might be misaligned. Similarly, Hill, Darling, and Raimondi (2003) introduced the term work-home boundary violations to reflect when individuals desire segmentation but experience work intrusions that breach their work-home boundaries. Moreover, Ashforth et al. (2000) posited that role transitioning was dependent on the extent to which two roles were actually integrated rather than just preferences for integration. This theorizing together with prior findings suggest that employees who prefer integrated work and nonwork roles may more frequently and easily switch from a nonwork role to a work role when confronted with unexpected work intrusions during nonwork hours compared to those who prefer segmented roles. I proposed the following:

Hypothesis 6a: An integration boundary management strategy is positively related to unplanned nonwork-to-work role switching responses in nonwork domains. Employees who prefer more work-nonwork integration are more likely to respond to intrusions by switching roles compared to those who prefer more segmentation.

Hypothesis 6b: An integration boundary management strategy is negatively related to the difficulty of unplanned nonwork-to-work role switching in nonwork domains. Employees who prefer more work-nonwork integration experience less role switching difficulty compared to those who prefer more segmentation.

Conscientiousness. Conscientiousness is a component of the Five Factor Model of Personality (FFM; Costa, McCrae, & Dye, 1991; Digman, 1990) that may be related to unplanned role switching. Conscientiousness refers to the extent to which an individual is generally hard-working, responsible, and ambitious (Costa & McCrae, 1992; Goldberg, 1990). The strong work ethic of conscientious workers that motivates them to be heavily invested in their various life roles (Kossek et al., 1999; Saucier & Ostendorf, 1999) may prevent them from distancing themselves from their work, as they want to accomplish their work goals (Judge & Ilies, 2002) and be dependable workers (Barrick & Mount, 1991). Although conscientiousness has not been studied as an antecedent of role transitioning before, it has been positively associated with how much and for how long one expends personal resources (e.g., time, energy, attention) in various life roles (Mount, Barrick, & Strauss, 1999; Witt & Carlson, 2006). Conscientiousness has been associated with high involvement and high investment in the work role (Judge, Heller, & Mount, 2002; Lodi-Smith & Roberts, 2007; Organ & Lingl, 1995), with high job effort levels (Wayne et al., 2004), and with constructive and responsible work behavior (i.e.,

organizational citizenship behaviors; Bowling, 2010) in various meta-analyses (Borman, Penner, Allen, & Motowidlo, 2001; LePine, Erez, & Johnson, 2002; Organ & Ryan, 1995). Therefore, conscientious individuals may frequently engage in unplanned role switching, but it may be difficult since they tend to exert a lot of effort in their life roles. Thus, I predicted the following:

> Hypothesis 7a: Conscientiousness is positively related to unplanned nonwork-to-work role switching responses in nonwork domains. Employees with higher levels of conscientiousness will be more likely to respond to intrusions by switching roles compared to those with lower levels of the trait.
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> Hypothesis 7b: Conscientiousness is positively related to the difficulty of unplanned nonwork-to-work role switching in nonwork domains. Employees with higher levels of conscientiousness experience more role switching difficulty compared to those with lower levels of conscientiousness.

Mindfulness. Mindfulness is an individual characteristic that has not been explored in prior role transitioning studies but may be uniquely relevant to the type of role switching that is the focus of my research. Mindfulness is the state of being attentive to and aware of what is going on in the present moment (Brown & Ryan, 2003). Mindful individuals have the ability to focus on the present moment and to persist with or redirect their behavior to the pursuit of goals and values (Bond, Hayes, & Barnes-Holmes, 2006). This particular personality trait may not be pertinent to intended role transitions that are planned ahead of time or for more formal transitions that involve physically moving between life domains. However, examining mindfulness may be useful when trying to understand how individuals respond to unplanned work intrusions in nonwork domains.

Mindful individuals may take notice of unexpected work interruptions and redirect their attention and/or behavior from nonwork tasks/activities to attend to the work task/activity. Individuals with high levels of mindfulness who experience unexpected work intrusions may also feel they have the ability to quickly switch to the work role while still remaining present in their nonwork roles. Moreover, the ability of mindful individuals to remain present may make it easy for them to continue pursuing nonwork tasks/activities after attending to work tasks. Mindfulness has also been shown to serve as a useful stress reduction technique (Brown & Ryan, 2003), and has been linked with positive outcomes for employees, including well-being (Bond & Flaxman, 2006). These findings suggest that although mindful employees may frequently engage in unplanned role switching, they may not perceive the experience as difficult. Therefore, I predicted the following:

> Hypothesis 8a: Mindfulness is positively related to unplanned nonwork-to-work role switching responses in nonwork domains. Employees with higher levels of mindfulness will be more likely to respond to intrusions by switching roles than those with lower levels.
>
> Hypothesis 8b: Mindfulness is negatively related to the difficulty of unplanned nonwork-to-work role switching in nonwork domains. Employees with higher levels of mindfulness will experience less role switching difficulty than those with lower levels.

Self-esteem. Global self-esteem represents an individual's overall belief about his or her self-worth and competence. According to Fishbein and Azjen (1975), the ability of an attitude to predict a behavior is a function of how closely the attitude is related to the

behavior of interest. Generally, the more specific an attitude is, then the greater predictive power it has. Organization-based self-esteem (OBSE) is a specific form of self-esteem that considers employees' self-evaluations specifically within the context of the workplace and has been related to work specific behaviors. OBSE refers to employees' beliefs that they can satisfy their needs by participating in roles within the organization (Pierce, Gardner, Cummings, & Dunham, 1989) and beliefs about their self-worth and competence as an organizational member (Bowling, 2010). OBSE has been related to job performance and organizational citizenship behaviors (Bowling et al., 2010). Employees high in OBSE may respond to work intrusions by switching roles, as they feel worthy to their organizations and want to fully participate in their work roles in order to fulfill their own needs. Also, employees high in OBSE may not report much difficulty with sudden role switching due to their high levels of competence as organizational members. Thus, I proposed the following:

> Hypothesis 9a: Organization-based self-esteem is positively related unplanned nonwork-to-work role switching responses in nonwork domains. Employees with higher OBSE will be more likely to respond to intrusions by switching roles compared to those with lower levels of OBSE.
>
> Hypothesis 9b: Organization-based self-esteem is negatively related to the difficulty of unplanned nonwork-to-work role switching in nonwork domains. Employees with higher OBSE experience less role switching difficulty compared to those with lower levels of OBSE.

I also examined several participant characteristics that may be related to unplanned role switching. Demographic background factors such as gender and age that

have been related to work-nonwork experiences may be meaningfully related to unplanned role switching. Also, demographic variables can serve as proxies for underlying processes (Spector & Brannick, 2011) that may help explain unplanned role switching behavior in future studies. For example, a relationship between age and unplanned role switching may imply that work experience is important to understanding unplanned role switching behavior. The participant characteristics to be explored are discussed next.

Men and women tend to differ in how they manage their work and nonwork boundaries

(Rothbard et al., 2005; Winkel & Clayton, 2009). Men are more likely to allow work to permeate nonwork domains (Boswell & Olson-Buchanan, 2007). In contrast, women have a greater desire for segmentation between work and nonwork roles (Rothbard et al., 2005), which may make role switching a less frequent but more difficult process for women than it is for men. Therefore, I predicted:

Hypothesis 10a: Men experience more unplanned nonwork-to-work role switching responses in nonwork domains than women.

Hypothesis 10b: Women experience more difficult unplanned nonwork-to-work role switching in nonwork domains than men.

An individual's work hours and organizational tenure are also relevant to role switching. The segmentation model suggests that confining work hours to the workplace helps keep work and nonwork domains segmented, thereby decreasing the likelihood of work intrusions and the occurrence of role switching. However, for employees who do spend many hours in the workplace, when they engage in unplanned role switching it

may be very difficult for them since they have expended much of their resources in the work role.

Hypothesis 11a: Weekly hours spent at the workplace is negatively related to unplanned nonwork-to-work role switching responses in nonwork domains.

Hypothesis 11b: Weekly hours spent at the workplace is positively related to the difficulty of unplanned nonwork-to-work role switching in nonwork domains.

Longer tenured employees have reported less work-to-nonwork permeability compared to shorter tenured employees (Olson-Buchanan & Boswell, 2006), and therefore are expected to engage in less unplanned role switching behavior than shorter tenured employees.

Hypothesis 12: Organizational tenure is negatively related to unplanned nonwork-to-work role switching responses in nonwork domains.

I planned to achieve several objectives in Study 3 by examining a diverse set of antecedents. First, analyzing whether unplanned role switching is different from conceptually similar antecedents could provide evidence of discriminant validity. For instance, integration boundary management strategy has often been used as an indicator of role transitioning. Although I predicted that this variable would be related to unplanned nonwork-to-work role switching, I expected it to be conceptually distinct. Second, understanding the relationships of various antecedents with unplanned role switching would be helpful in developing a nomological network of unplanned nonwork-to -work role switching. Third, identifying these relationships may help practitioners better understand employees' unplanned role switching experiences. What may also be helpful from a practical perceptive is to examine the impact of unplanned nonwork-to-

work role switching on employees. The findings could add to the nomological net of variables surrounding the focal construct. The outcomes are discussed next.

Study 3: Outcomes of nonwork-to-work role switching

As the concept of unplanned nonwork-to-work role switching in nonwork domains has not been well developed or measured, it is not clear whether it is predictive of important employee outcomes, such as psychological health. An investigation of various outcome variables can demonstrate that unplanned role switching is distinct from certain outcome variables, such as employees' feelings of conflict between their roles, and can also add to the nomological net surrounding unplanned role switching (see Figure1). Also, identifying outcomes may help practitioners understand whether unplanned role switching negatively and/or positively impacts employees' lives. Showing a link from unplanned nonwork-to-work role switching to negative employee outcomes can justify the importance of studying the construct.

Long work hours in general have been linked with poor psychological health (Sparks, Cooper, Fried, & Shirom, 1997; Spurgeon, Harrington, & Cooper, 1997; van der Hulst, 2003) and poor physical health (MacDermid, Galinsky, & Bond, 2005; Sparks et al., 1997). Additionally, empirical and theoretical work from the occupational health literature has focused on the relationship of job demands (e.g., workload) with poor physical health and psychological health (Job-Demands-Job Control Model; Etzion, Eden, & Lapidot, 1998; Hackman & Oldham's Job Characteristics Model; Hackman & Oldham, 1976). However, Kanter (1977) noted several decades ago that the amount of time demanded by work affects family life, and so work-life researchers have mainly been interested in how work demands interfere with family responsibilities. Accordingly,

boundary management and role transitioning studies have mainly focused on work interference with nonwork as an outcome variable (Chesley, 2005; Edwards & Rothbard, 1999; Voydanoff, 2005). But considering the increased interdependence of work and nonwork domains over the past few decades, it is important to examine how work demands that transcend work-nonwork boundaries such as work intrusions may negatively impact not only personal responsibilities but also employee well-being.

I examined work role interference with nonwork roles as an outcome. When work unexpectedly intrudes into personal life, employees may unexpectedly have to switch from nonwork roles to the work role, which can create feelings of interference between life roles (Edwards & Rothbard, 1999; Hecht, 2001). I also explored some potential negative health implications of unplanned role switching. Unplanned role switching may drain personal resources (e.g., energy; Hecht, 2001; Edwards & Rothbard, 2000) and prevent individuals from fully recovering from work demands (Geurts & Sonnentag, 2006; Meijman & Mulder, 1998), which has been associated with burnout (Sonnentag & Fritz, 2007; von Thiele, Lindfors, & Lundberg, 2006) and poor physical health (von Thiele et al., 2006).

It is important to examine feelings of conflict between work and nonwork roles, burnout, and poor physical health symptoms, as each has been linked with critical organizational outcomes. For example, work interference with nonwork has been related to burnout (e.g., Enzmann et al., 1998), which in turn has been associated with absences (Barrick & Mount, 1991), poor job performance (Bakker, Demerouti, & Verbeke, 2004), turnover intentions, and low levels of organizational commitment (see Andreassen, Hetland, & Pallesen, 2010). Poor physical health has been linked with absences and

turnover intentions (e.g., Paykel, Weissman, Prusoff, & Tonks, 1971). I focused on work interference with nonwork, burnout, and poor physical health symptoms to understand if unplanned nonwork-to-work role switching in nonwork domains negatively impacts three key areas of an employee's life – personal/family life, psychological health, and physical health.

Work-to-nonwork interference. Work-nonwork conflict occurs when the demands of the work role and nonwork roles (e.g., parent, spouse, friend, etc.) compete (Greenhaus & Beutell, 1985; Kossek & Ozeki, 1998). When this conflict occurs during overlapping points in time, the demands of one role can interfere directly with the ability to satisfy other role demands (Hecht, 2001). Work-nonwork conflict may occur in either direction (Hackman & Oldham, 1980) – work may interfere with nonwork or nonwork may interfere with work (Frone et al., 1997). When discussing work-nonwork conflict, the terms conflict and interference are used interchangeably as they have been in the prior work-life literature.

Since the plan for Study 3 was to examine how individuals may quickly respond to work intrusions during nonwork hours, my focus was on how the demands of the work role may compete and interfere with nonwork roles. The common terms work-to-family conflict (WFC) and work interference with home (WHI) have been used interchangeably in the literature. Although WHI does not capture nonwork domains other than the home, this term is used throughout the paper to represent work-to-nonwork interference, as it is more inclusive compared to the other commonly used terms.

Role strain theory and the resource drain model provide the framework for understanding the relationship between nonwork-to-work role switching and WHI. Role

strain has been defined as the felt difficulty in fulfilling role obligations (Goode, 1960). When demands from a domain-irrelevant role permeate a life domain (i.e., domain relevant role), strain arising from the domain-irrelevant role may make it difficult to meet the expectations of a domain-relevant role (Edwards & Rothbard, 2000; Frone, Russell, & Cooper, 1992b; Greenhaus & Beutell, 1985; Kahn et al., 1964). According to the resource drain model, felt strain may stem from lacking the resources to meet the demands of multiple roles, as expending of resources (e.g., time, attention, and energy) in one role leaves fewer resources available for other roles (Edwards and Rothbard, 2000).

Unplanned role switching and WHI. As unplanned work intrusions occur in nonwork domains, individuals must quickly decide how to manage their work-nonwork boundaries. When an individual abruptly switches from a nonwork role to the work role, finite resources are allocated to both domain-relevant roles (i.e., nonwork roles) and a domain-irrelevant role (i.e., work role), thereby reducing the availability of scarce resources for nonwork roles (Edwards & Rothbard, 2000; Hecht, 2001; Kahn et al., 1964; Marks, 1977). The more an individual must allocate scarce resources to the work role during nonwork hours, the more one may experience WHI, as the domain-irrelevant role is favored over the domain-relevant role and work role demands limit nonwork role activities (Hecht, 2001). Moreover, the more physical and mental effort that is expended when switching roles, the more finite personal resources the individual must draw upon, thereby contributing to WHI.

Although there are no studies on the relationship between unplanned role switching and WHI, research on related constructs is relevant. WHI has been associated with a lack of psychological detachment from work during nonwork hours (Etzion et al.,

1998; Meijman & Mulder, 1998; Sonnentag & Bayer, 2005). Bringing work home after hours, work–family multitasking while at home, and work-related technology use after work hours have all been associated with WHI (Chesley, 2005; Duxbury, Higgins, & Thomas, 1996; Hyman, Scholarios, & Baldry, 2005; Kossek et al., 2006; Voydanoff, 2005). Work permeations in the nonwork domain (e.g., receiving job contacts) have also been linked with WHI (Bulger et al. 2007; Clark, 2002; Hetch & Allen, 2009; Olson-Buchanan & Boswell, 2006; Voydanoff, 2005a; 2005b). In role transitioning studies, individuals who reported work-nonwork role transitions as a common occurrence in their lives also reported frustrations with balancing work and personal life over time (Clark, 2000; Clark & Farmer, 1998; Nippert-Eng, 1996). Together, the resource drain model and empirical evidence suggest that unplanned nonwork-to-work role switching in nonwork domains may be positively associated with WHI.

Hypothesis 13a: Unplanned nonwork-to-work role switching responses in nonwork domains are positively related to work-to-nonwork interference. Employees who engage in more role switching experience higher levels of interference compared to those who engage in less role switching.

Hypothesis 13b: The difficulty of unplanned nonwork-to-work role switching in nonwork domains is positively related to work-to-nonwork interference. Employees who report more difficulty in switching roles experience higher levels of interference compared to those who report less difficulty.

Unplanned role switching and burnout. Although the resource drain model provides a good framework for understanding the relationship between unplanned role switching and WHI, it is not sufficient for explaining how role switching may be related

to employee health. The effort-recovery (E–R) model is typically applied in occupational health research as the underlying mechanism in the relationship between workload and well-being (Meijman & Mulder, 1998). The core assumption of the E-R model is that effort expended to meet work demands may lead to negative load reactions for employees (e.g., short-term physiological and psychological reactions) that are usually reversible with sufficient recovery time during nonwork hours. Recovery is defined as a psycho-physiological unwinding after effort expenditure at work (Geurts & Sonnentag, 2006). If an individual has the opportunity to take a respite from work demands then psychobiological systems have the chance to stabilize, return to baseline level, and recover from the effects of work demands. The need for recovery refers to the desire to recuperate from work-induced fatigue (Jansen, Kant, Kristensen, & Nijhuis, 2003). Employees have a great need for recovery from negative workload effects during nonwork hours, as it allows the effects of work demands to diminish and/or disappear.

When individuals do not have adequate opportunities to recover from work demands, then psycho-physiological systems remain activated or are too quickly re-activated, decreasing the chance for stabilization and a return to baseline level (Geurts & Sonnentag, 2006). When an individual is in this suboptimal state, one must make additional compensatory efforts to perform adequately during the next workday. Consequently, negative workload reactions may accumulate and/or intensify, resulting in psychological health problems such as chronic stress (Geurts & Sonnentag, 2006; Sluiter, Van deer Beek, & Frings-Dresen, 1999). Lack of recovery can eventually lead to less effort expenditure at work and poor job performance (Fritz & Sonnentag, 2006; Quilty, Oakman, & Risko, 2006; Sonnentag, Kuttler, et al., 2010).

Applied to the work-life interface, excessive effort in both work and nonwork domains has had detrimental health effects when recovery is not sufficient (Geurts et al., 2005; von Thiele et al., 2006). When work demands do not cease during nonwork hours, the individual is unable to psychologically detach from work, as job-related activities and thoughts during nonwork hours limit mental distance from work (Meijman & Mulder, 1998). Lack of mental distance from work can contribute to levels of exhaustion when the individual eventually returns to work (Fritz & Sonnentag, 2006) and prevent adequate recovery from work (e.g., Geurts et al., 2005; Hecht, 2001), which may invoke stress and emotional strain (Cardenas, Major, & Bernas, 2004; Goode, 1960; Rothbard, 2001). In particular, individuals may experience burnout, which is considered a work-related indicator of psychological health (Enzmann et al., 1998).

Burnout is related to the resource drain model, as it involves the draining of mental resources caused by chronic job stress. The core components of burnout are emotional exhaustion (or low energy) and low identification with the work role (i.e., cynicism; Maslach, Schaufeli, & Leiter, 2001). Emotional exhaustion is particularly relevant to Study 3, as it involves feelings of being overextended and depleted of emotional and physical resources (Maslach, Schaufeli, and Leiter, 2001). Workers who abruptly switch roles and expend great physical and/or mental effort to do so may lack psychological detachment from work and have fewer resources available for recovery from work demands, contributing to burnout. Although there is no research on the relationship between role switching and burnout, there is extensive evidence of positive relationships between job demands and burnout (Bakker, Demerouti, de Boer, & Shaufeli, 2003; Bakker, Demerouti, Taris, Schaufeli, & Schreurs, 2003; Demerouti,

Bakker, Nachreiner, & Schaufeli, 2001; Hakanen, Bakker, & Schaufeli, 2006; Llorens, Bakker, Schaufeli, & Salanova, 2006; Schaufeli & Bakker, 2004). This direct relationship is most evident when examining the core dimension of burnout – emotional exhaustion (Bakker, Demerouti, de Boer, et al., 2003; Bakker et al., 2004; Demerouti et al., 2001; Lewig & Dollard, 2003).

Some researchers have examined the relationship between variables closely related to unplanned role switching and psychological health and burnout in particular. Chesley (2005) found that persistent work-related technology use after work hours was positively related to psychological distress (e.g., how often in the past month they felt "restless or fidgety," "nervous," or that "everything was an effort"?). In Duxbury et al.'s (1996) study, computer-supported supplemental work at home was related to perceived stress, (e.g., confidence in one's ability to handle personal problems). Bringing work home and receiving job contacts while at home was positively related to perceived stress (e.g., trouble sleeping to the point that it affected your performance on and off the job; Hyman et al., 2005; Voydanoff, 2005). Additionally, lack of psychological detachment from work (i.e., mentally "switching off") during nonwork hours was related to emotional exhaustion (Sonnentag & Fritz, 2007; Sonnentag, Kuttler, et al., 2010). Together, the E-R model and empirical evidence suggest that unplanned nonwork-to-work role switching in nonwork domains may be positively related to burnout.

> Hypothesis 14a: Unplanned nonwork-to-work role switching responses in nonwork domains are positively related to burnout. Employees who engage in more role switching experience higher levels of burnout compared to those who engage in less role switching.

Hypothesis 14b: The difficulty of unplanned nonwork-to-work role switching in nonwork domains will be positively related to burnout. Employees who report more difficulty in role switching experience higher levels of burnout compared to those who report less difficulty.

Unplanned role switching and physical health. The E-R model also serves as the theoretical basis for a relationship between unplanned role switching and symptoms of poor physical health. Unexpectedly switching to the work role during nonwork hours prevents employees from psychologically detaching form work, which may result in accumulative negative workload reactions that include short-term physiological reactions (Geurts et al., 2005; Meijman & Mulder, 1998). Given sufficient time to recover from work demands during nonwork hours, these short-term reactions are typically reversible as psychobiological systems have a chance to stabilize and return to baseline level. However, if individuals do not have adequate time to recover, then negative workload reactions may accumulate and/or intensify overtime, re-activating physiological systems too quickly or keeping them activated for too long. If recovery remains insufficient over an extended period of time, psychological health problems may eventually develop into serious physical health risks, such as high levels of cardiovascular activity (von Thiele et al., 2006).

A lack of psychological detachment from work has been positively related to psychosomatic complaints (e.g., feelings of dizziness and fatigue; Sonnentag, Kuttler, et al., 2010) and a need for recovery (e.g., feeling too tired to for personal activities; Sonnentag & Bayer, 2005; Sonnentag, Kuttler, et al., 2010). These findings suggest that employees who engage in unplanned nonwork-to-work role switching in nonwork

domains may report poor physical health symptoms, such as fatigue, dizziness, and headaches. Based on these findings, I posed the following:

> Hypothesis 15a: Unplanned nonwork-to-work role switching responses in nonwork domains are positively related to poor physical health symptoms. Individuals who engaged in more role switching will report more poor physical health symptoms than those who engage in less role switching.
>
> Hypothesis 15b: The difficulty of unplanned nonwork-to-work role switching in nonwork domains is positively related to poor physical health symptoms. Individuals who report more role switching difficulty experience poor physical health symptoms than those who report less role switching difficulty.

Unplanned role switching and affective states. Research has shown that negative affect is highly relevant for experiences at home (Ilies et al., 2007). According to Russell and Caroll's (1999) affect model, negative affect refers to states of displeasure and negative activation. Employees faced with a high degree of job stressors may react with negative affect (Gryzwacz, Almeida, Neupert, & Ettner, 2004; Zohar, Tzischinski, & Epstein, 2003). Negative affect may be an outcome of unplanned role switching since some employees may perceive the experience as a job stressor. The underlying rationale for this relationship is the E-R model.

Low detachment from work during nonwork hours requires an individual's functional systems (e.g., cardiovascular systems) to remain in a state of prolonged activation (Brosschot, Gerin, & Thayer, 2006), which may increase negative affect (Thomson, 2006). Even just thinking about work during nonwork hours may negatively impact affective states (Schaufeli, Taris, & van Rhenen, 2008; Snir & Harpez, 2002;

Sonnentag, Mojza, et al., 2008). Indeed, lack of psychological detachment from work throughout the week predicted affective states at the end of the workweek (Sonnentag et al., 2008). Furthermore, lack of detachment from work may also reduce opportunities to fully immerse in positive personal life experiences. For example, when employees were preoccupied with job-related issues while at home, they reported less involvement in nonwork behaviors such as spending time with family (Ilies et al., 2007).

Similarly, continual unplanned nonwork-to-work role switching, particularly if it is a difficult experience, may have a negative impact on an individual's affective state. For instance, individuals who engage in unplanned role switching as a result of unexpected work intrusions may feel distressed, exhausted, or nervous. Moreover, switching from a nonwork role to the work role may make it difficult to enjoy and capitalize on positive personal experiences (Lyobomirsky & Nolen- Hoeksema, 1993), and may cause someone to miss personal experiences that can increase positive affect (Gable et al., 2000). The extent of negative affect may depend on several factors, such as the extent to which a work intrusion was unexpected or disruptive or the extent to which an unplanned role switching experience was difficult. As the focal construct was not fully developed at the start of my research, it was not clear which factors would be most important in predicting affective states following unplanned role switching experiences. Hence, I proposed the following:

> Research question 1: Is unplanned nonwork-to-work role switching in nonwork domains related to states of negative affect?

Summary of research contributions

As discussed earlier, today's flexible and permeable work-nonwork boundaries and the changing values and expectations of individuals and employers may be largely responsible for frequent unexpected work intrusions in employees' personal lives. Since past research has mainly focused on planned role transitions (e.g., bringing work home) or transitions between roles while moving between life domains (e.g., commuting from home to work), researchers and practitioners do not fully understand the nature of nonwork-to-work role switching when it is unplanned within nonwork domains. As a result, it remains unclear how frequent and difficult these experiences are for employees. I designed Study 1 to further clarify the construct of unplanned nonwork-to-work role switching and develop new measures of the construct, which can make several important contributions to the work-life literature.

The first goal of Study 1 was to use the qualitative data from the employee interviews to provide insights into the focal construct, i.e., the nature of work intrusions and how employees respond to them. This approach could help identify the critical aspects of the focal construct that should be measured.

The second goal for Study 1 was to clarify the construct to be measured and gain insights into what needs to be measured. I intended to use the rich qualitative data to generate measures that capture the critical aspects of unplanned role switching. Existing role transitioning measures cannot be used to assess unplanned role switching, as explained earlier. I expected that my measures would focus on the unplanned nature of switching from nonwork roles to the work role while in nonwork domains. My aim was to develop measures that could assess not only how often individuals responded to intrusions by switching roles, but also the difficulty in having to abruptly switch roles in

response to work intrusions in nonwork domains. The amount of behavioral and/or cognitive effort required to unexpectedly switch roles is particularly important, as frequency alone may not determine how problematic unplanned role switching is for individuals. I intended to develop measures that could assess both behavioral and psychological aspects of unplanned role switching behavior.

My qualitative analysis could potentially reveal other aspects of unplanned role switching that should be measured. For instance, the length of time required to switch roles may be important. However, since no prior studies have taken a qualitative approach, it was not clear at the start of my research which aspects of role switching should be included in my measures. To ensure that I fully explored the nature of these experiences, as part of the interviews I included questions about the context of the unexpected intrusions (e.g., the timing and source).

The third goal of Study 1 was to determine whether unplanned role switching experiences are different from planned role switching experiences. By asking employees to describe both planned and unplanned role switching experiences, the interviews could help in understanding the aspects of unplanned role switching that differ from planned role switching, the underlying psychological processes that explain the behavior, and how the experiences impact individuals.

Study 3 was designed to achieve several goals. The first purpose was to test for discriminant validity by measuring variables that are conceptually similar to role transitioning, such as integration boundary management strategy. I not only planned to assess factors that have been shown to be related to planned role transitioning (e.g., role

identification), but also variables that were thought to be related specifically to unplanned role switching in nonwork domains, such as mindfulness.

A second goal of Study 3 was to contribute to and extend role transitioning research and theory by examining various antecedents and outcomes of unplanned role switching. Achieving this objective would help in developing a nomological net of important variables surrounding the focal construct. I planned to examine various individual, job, and organizational variables as antecedents. Prior to the present study, unplanned nonwork-to-work role switching in nonwork domains has not been properly measured, and as a result, its outcomes were not well understood. However, based on theoretical reasoning, I examined the relationships of unplanned role switching with employee outcomes, such as WHI, job burnout, physical health symptoms, and affective states. By providing some evidence of relationships between unplanned role switching and important employee outcomes, Study 3 could help justify the importance of the construct. From a practical perspective, it was critical to understand whether unplanned role switching negatively affects the quality of employees' nonwork lives and their health, which may ultimately affect critical work outcomes. For example, WHI has been negatively related to employees' marital satisfaction (Judge, Ilies, & Scott, 2006). Burnout has been associated with poor job performance (Bakker et al., 2004) and low levels of organizational commitment (see Andreassen et al., 2010).

Overall, the present research was designed to address several objectives. The main goals of Study 1 were to develop the construct of unplanned nonwork-to-work role switching in response to work intrusions in nonwork domains and create measurement scales that adequately assess the various psychological processes underlying the

construct. Study 2's purpose was to refine my new measures to ensure that they adequately assess the underlying processes of unplanned nonwork-to-work role switching. Study 3 was designed to assess the psychometric properties of my new measures and develop a nomological net of variables (see Figure 1).

Overview of studies 1, 2, and 3

I followed guidelines by suggested by Hinkin (1998), Nunnally (1976), and Cronbach and Meehl (1955) to further develop unplanned nonwork-to-work role switching and create new measures. First, I specified the construct domain, i.e., nonwork-to-work role switching, and created measurement scales (Study 1). Next, I empirically determined the extent to which the new scale items measured the domain of interest (Study 2). Finally, in Study 3 I assessed the psychometric properties of my new scales (i.e., reliability, dimensionality, and discriminant validity), and began to develop a nomological net of variables.

Study 1 was designed to explore the concept of unplanned nonwork-to-work role switching and generate new measures. I gathered qualitative data via employee interviews using the critical incident technique (CIT; see Flanagan, 1954). The CIT is an effective exploratory and investigative tool that has been used frequently by industrial and organizational psychologists over the past 50 years (Butterfield, Borgen, Amundson, & Maglio, 2005). A distinctive feature of the CIT is a focus on critical events, incidents, or factors that help promote or detract from experiences. I took an inductive approach, using the CIT to understand individuals' experiences with work intrusions and role switching (Hinkin, 1998). This approach helped identify whether there are other critical dimensions of unplanned role switching that should be measured, in addition to difficulty

and frequency. The CIT also helped ensure that unplanned nonwork-to-work role switching is well-defined, distinguished from planned role switching, and adequately assessed. Lastly, I coded the data gathered with the CIT and used the codes to develop measures of unplanned nonwork-to-work role switching.

I designed Study 2 to assess the content validity of the unplanned role switching scale items developed in Study 1, which addressed step one of Hinkin's (1998) guidelines. The measurement items should adequately assess the unplanned process of switching from a nonwork role to the work role in response to work intrusions during nonwork hours while in nonwork locations. Using Schiesheim and colleagues' (Schiesheim, Powers, Scandura, Gardiner, & Lankau, 1993) technique, I tested my measurement items with a small sample of interviewees from Study 1 and several work-family experts.

Together, the empirical results from Study 2 and Study 3 were used to test and refine my measures of unplanned nonwork-to-work role switching. Study 3 was designed to: 1) assess the psychometric properties of the new role switching measures that were refined in Study 2, and 2) begin to develop a nomological net of variables surrounding unplanned nonwork-to-work role switching by examining its relationships with various antecedent and outcome variables (Cronbach & Meehl, 1955). To achieve the first objective, I evaluated the factor structure of the unplanned role switching scales. I also assessed discriminant validity by measuring unplanned role switching and other work-life constructs (e.g., work-to-nonwork interference) that were expected to be conceptually related but distinct from unplanned role switching. To accomplish the second objective, I tested the relationships between unplanned nonwork-to-work role switching and my

proposed antecedent and outcome variables. Study 3 was expected to demonstrate: (1.) the reliability (i.e., internal consistency) of my new measures, (2.) the multi-dimensionality of unplanned nonwork-to-work role switching, (3.) the extent to which unplanned nonwork-to-work role switching is different from similar work-life constructs, and (4.) the potential antecedents and outcomes are related to unplanned nonwork-to-work role switching.

Chapter 3: Study 1

Study 1 methodology

Study 1 was designed to explore unplanned nonwork-to-work role switching, generate items for new measures of the construct, and to compare and contrast planned and unplanned role switching experiences. I gathered qualitative data via employee interviews using the CIT (Chell, 2004) to understand individuals' experiences with work intrusions as well as planned and unplanned nonwork-to-work role switching.

Participants. I needed to gather data from employees who could provide rich and detailed examples of unexpected work intrusions as well as their responses to the intrusions, which would allow me to fully understand their unplanned role switching experiences. I also selected participants who could share specific instances of when they have engaged in planned nonwork-to-work role switching, such as having to participate in weekly meetings during their nonwork hours. By investigating these two types of experiences, I could start to identify the critical characteristics of unplanned nonwork-to-work role switching that differentiate it from planned role transitioning and thus should be measured. This approach could also help to determine whether both the difficulty and frequency of unplanned role switching are important and should be measured.

Since it was important for me to interview employees who were likely to experience intrusions during their personal time and thus could provide rich and detailed accounts of their experiences, there were several criteria for my sample. Participants had to be full-time employees who worked at only one paid job which could be performed outside of their traditional workplaces (e.g., the office) and beyond their normal work hours. Participants were also required to hold jobs in which they depended on others

and/or others depended on them to meet their daily work objectives, such as in a team-based structure (regardless of how many teams they were involved in, whether the team changed over time, or whether the team was virtual). A work team or work group is composed of two or more individuals who perform organizationally relevant tasks, share common goals, socially interact, demonstrate task interdependencies, and are embedded in an organizational context (Kozlowski & Bell, 2003). Employees working within teams are likely to experience work intrusions due to the interdependent nature of the work group. My sample criteria also required that employees meet at least one of the following requirements: managed other employees, regularly reported to their own managers, or regularly work with customers (internal or external to the company), clients, or vendors. Managers, employees who report directly to managers, and those working in client-focused jobs were expected to experience work intrusions during their nonwork hours.

To identify employees who frequently experienced unexpected work intrusions during nonwork hours, I used a combination of convenience sampling and intensity sampling, which involves sampling "…information-rich cases that manifest the phenomenon of interest intensely" (Miles & Huberman, 1994, p. 28). In order to accomplish these objectives, I excluded workers whose experiences with work intrusions and unplanned role switching could be atypical (e.g., the experiences of part-time, temporary, or self-employed workers). This approach could help in generalizing the results of Study 1 to employees who are likely to experience work intrusions. Therefore, I did not select any home-based workers or frequent telecommuters (i.e., work regularly scheduled work hours at home more than one day, or eight hours, per week), small

business owners, self-employed workers, part-time employees (i.e., work fewer than 30 hours per week), or temporary/contract employees.

Participants were contacted via e-mail by me. The e-mail invitation included the general purpose of the study, a brief description of the interview process including the types of experiences I was studying, and an attachment with the consent form which provided more detailed information about the interview process. If the potential interviewees had any questions or concerns about the study, they had the option to address their questions with me by replying to the e-mail invitation. If the individuals were interested in participating, they were asked to review the consent form. If they agreed to the requirements of the study, they were asked to sign and submit the consent form. See Appendix A for the e-mail invitation and consent form.

My interviewee sample consisted of ten women and eight men, ranging in age from 23 to 60-years-old with an average age of 35. The majority of the sample was White, and there were three African-Americans and two Hispanic participants. Seven out of the 18 interviewees had children, with three having at least one child under the age of five. Fourteen interviewees were married/living as married. Among the married/living as married participants, 13 had full-time working spouses/partners and one had a part-time working spouse/partner. Education levels varied, ranging from high school/GED to graduate degree (e.g., master's degree). More specifically, three participants had some college education, nine had bachelor degrees, and six had graduate degrees. Job levels varied as well, with five non-manager professionals (e.g., engineer, accountant), one administrative non-manager, three first-level supervisors/managers, two mid-level managers, two upper-level managers (e.g., department head), and five senior managers

(e.g., VP or director). Organizational tenure ranged from less than one year to 29 years, with an average tenure of seven years.

Procedures. Five interviews were conducted in person, and 13 were conducted via telephone. An interview technique using the CIT method was essential for better understanding the concept of unplanned role switching and generating measurement scales. Over the years, the phenomena being studied using the CIT method have changed (Butterfiled, Borgen, Amundson, & Maglio, 2005). Initially, the primary use of CIT by industrial and organizational psychologists was to help develop job requirements that were critical for success in a variety of jobs (e.g., Flanagan, 1949). However, more recently researchers began to use the CIT to examine psychological states or experiences. For example, O'Driscoll and Cooper (1996) used the CIT to study stress and coping at work. The CIT has also been used to study thoughts, feelings, and why participants behaved the way they did (Ellinger & Bostrom, 2002). This approach involves focusing on what a person did, why s/he did it, the outcome, and the most satisfying (or dissatisfying) aspect of the situation. The CIT has been used to study aspects of the work-nonwork interface (e.g., Powell and Greenhaus, 2006).

Also related to the present study, CIT studies have shifted from direct observations of behavior to the interview method as a means to gathering retrospective self-report data (Butterfield et al., 2005). In the present study I used retrospective interviews to inquire about the participants' experiences with planned nonwork-to-work role switching (e.g., bringing work home) as well as how they responded to unexpected work intrusions during nonwork hours. In addition to how participants responded to work intrusions, I probed for thought processes and emotions that occurred while experiencing

work intrusions and also while unexpectedly switching roles (if applicable). Thus, I used the CIT to uncover behavioral, cognitive, and emotional information that was not directly observable.

Despite the retrospective nature of this method, there is evidence supporting the validity and reliability of descriptions obtained via interviews (O'Driscoll & Cooper, 1996). To ensure that the obtained data were reliable and valid, I asked participants to limit their experiences to the past few months, I requested a very high level of detail, and I allowed them to select their most memorable events (Butterfield et al., 2005). Moreover, to verify the reliability of the interview data, I employed several data checks that will be described in more detail in the data analysis section.

The interviews were semi-structured, such that questions were adapted to the experiences being described and how much information the participants were able to provide. See Appendix B for the interview protocol, which served as a guide. The interview process included a general introduction, a request for two critical incidents, descriptions of the incidents (e.g., actions taken, underlying thoughts and feelings, etc.), more questions to probe particular elements of each incident, follow-up questions, and some demographic questions.

As part of the general interview introduction, I described the types of experiences in which I was interested. First I described and provided examples of planned work tasks/activities that are performed during nonwork hours while in nonwork domains, such as bringing work home or routine checking of e-mail at night. Then, in contrast to the planned or anticipated role switching, I explained what constitutes an unexpected work intrusion and unplanned role switching. I made it clear that any planned work to be

performed beyond normal work hours does not qualify as a work intrusion. I also defined and provided examples for certain terms, such as nonwork hours, nonwork locations, and nonwork tasks/activities, if necessary. After explaining the types of experiences I was interested in, I posed my open-ended questions to gather information–rich examples of work intrusions and unplanned nonwork-to-work role switching from the participants. With the assistance of undergraduate research assistants, all interview data were transcribed verbatim.

Study 1 measures

Open-ended measures. After explaining the experiences I was interested in, I asked participants to describe two events: planned and unplanned nonwork-to-work role switching experiences. Asking participants to describe planned role transitions first helped them to distinguish between planned and unplanned role transitions. This approach also ensured that they were thinking of the appropriate type of role transition when I inquired about unplanned episodes. Each participant was then asked to describe an experience that involved a planned work task/activity performed during nonwork time while in a nonwork location. I probed for rich and detailed information to understand the critical aspects of *planned* work tasks/activities by asking about: the type of task/activity (e.g., planning, checking e-mail, scheduled late-night meeting), whether the participant typically communicated with anyone when performing the work task (e.g., co-worker, manager, client, etc.), how often the task/activity was performed, the context of the task/activity (e.g., day of the week, time of day, etc.), why the task/activity was performed, the duration of the task/activity, and how it made the participant feel (e.g., how disruptive it was to their personal time). I also asked them to discuss the impact of

the planned work activities on themselves and others with them at the time (e.g., how did they feel afterward?).

Second, I asked each participant to think of an example of an unplanned work intrusion during nonwork hours and how s/he responded to the intrusion. To obtain the critical characteristics of *unexpected* work intrusions and *unplanned* role switching, I asked participants to describe in detail the specific intrusions that occurred, the aspects of the intrusions that were disruptive or intrusive, how they responded to the intrusions, and how their responses and experiences affected them.

Throughout each interview I asked probing questions to capture rich and detailed information. I inquired about what led up to the intrusion, details about the intrusion itself (e.g., form of communication used, the source, etc.), how the participant and those with him/her felt about the intrusion, and how and why s/he responded the way s/he did. I also inquired about how those who were with the participant at the time reacted to the unplanned role switching behavior (e.g., their level of support for the behavior). Based on the incidents described, I also asked a few follow-up rating questions about the intrusions (e.g., extent to which ignoring the intrusions was difficult). A similar approach with follow-up questions has been used by other researchers (Tata, 1998).

Lastly, I asked participants for permission to follow-up with them via e-mail to confirm that my analyses and summaries accurately captured and described their experiences. I also asked if they were interested in participating in the next phase of my research (i.e., Study 2), which involved reviewing and providing feedback on newly developed measurement scale(s) intended to assess how people respond to work intrusions during nonwork hours. If they were interested, I informed participants that they

would receive another study invitation from me via e-mail in a few months (refer to Study 2 methodology section beginning on page 116 for information about this phase of the research).

Follow-up rating scales. Following the descriptions of the unplanned nonwork-to-work role switching experiences, I asked participants to rate the work intrusions and role switching experiences. First I asked questions about the work intrusions using four items: (1.) "Based on the experience you just described, please tell me how unexpected the work intrusion was for you on a scale of one to seven, with one being 'not at all unexpected' and seven being 'extremely unexpected'" (1 = *not all unexpected* to 7 = *extremely unexpected*), (2.) "How intrusive was the work intrusion on a scale of one to seven, with one being 'not at all intrusive' and seven being 'extremely intrusive'?" (1 = *not all intrusive* to 7 = *extremely intrusive*), (3.) "How urgent did the work intrusion seem to be, on a scale of one to seven, with one being 'not at all urgent' and seven being 'extremely urgent'?" (1 = *not all urgent* to 7 = *extremely urgent*), and (4.) "How disruptive was the work intrusion to your personal time, on a scale of one to seven, with one being 'not at all disruptive' and seven being 'extremely disruptive'?" (1 = *not all disruptive* to 7 = *extremely disruptive*).

One single item was asked only if the participant ignored the work intrusion: "How difficult it was for you to ignore the intrusion on a scale of one to seven, with one being 'not at all difficult' and seven being 'very difficult'?" (1 = *not at all difficult* to 7 = *extremely difficult*). I also asked questions about the unplanned role switching experience using two items, only if the participant switched roles in response to an intrusion: (1.) "How disruptive to your personal time was it to switch roles, on a scale of one to seven,

with one being 'not at all disruptive' and seven being 'extremely disruptive'?" (1 = *not all disruptive* to 7 = *extremely disruptive*), and (2.) "And now please tell me how difficult it was for you to switch from your nonwork task or activity to the work task on a scale of one to seven, with one being 'not at all difficult' and seven being 'very difficult'?" (1 = *not at all difficult* to 7 = *extremely difficult*).

Participant characteristics questions. I also gathered demographic data from each participant. I asked for the participant's age (in years; open-ended) and marital status (1 = S*ingle/not married*, 2 = *Separated*, 3 = *Divorced*, 4 = *Widowed*, 5 = *Married/living as married*). If the participant was married or living as married, I asked for his/her spouse/partner's work status (1 = *homemaker/unemployed*, 2 = *part-time, i.e., less than 30 hours per week*, 3 = *full-time, i.e., at least 30 hours per week*). If the participant's spouse/partner worked at least part-time, I asked how many hours per week s/he generally worked (open-ended). I also asked participants if they had any children (1 = *yes*, 2 = *no*), and if so, how many children they had (open-ended) and the children's ages (in years; open-ended). I asked each participant to indicate their highest level of education (e.g., what type of degree do you have; open-ended), the length of tenure at his/her company tenure (in years; open-ended), and job level (1 = *non-manager clerical, administrative or sales staff*, 2 = *non-manager professional staff (e.g., attorney, engineer, etc.)*, 3 = *first level supervisor/manager*, 4 = *mid-level manager*, 5 = *upper-level manager (e.g., department head)*, 7 = *senior manager (e.g., VP or director)*, 8 = *CEO, COO, president, or EVP*).

Study 1 analysis

Overview of coding. I took an inductive approach (Hinkin, 1998) to analyzing the participants' descriptions of their experiences with planned and unplanned role switching, which is useful for generating scale items. Also, I followed Boyatzis's (1998) recommended data-driven approach for developing themes and codes based on qualitative data. However, before identifying themes and key words that described the participants' experiences, I reduced the raw data to more manageable units, as recommended by Boyatzis (1998) when taking an inductive approach. This data reduction process involved summarizing, paraphrasing, and outlining the interview transcripts (Miller & Crabtree, 1992; Weitzman & Miles, 1995). Then I conducted four phases of coding: (1.) open-coding which involved breaking down the data to develop an initial set of codes based on a subsample of the interviews (Strauss & Corbin, 1990), (2.) focus coding which was used to determine the most useful codes (Lofland & Lofland, 1995), (3.) axial-coding which was used to organize the revised codes using a paradigm (Strauss & Corbin, 1998), and (4.) final coding of all interview transcripts using the final coding template.

Phase 1 coding: open-coding. The initial phase of content coding was based on the reduced raw data from four subsamples of the interviews. Boyatzis (1998) recommended using only a few criteria to select subsamples of qualitative data for coding. Since the extent of disruption and difficulty are two key characteristics of role transitioning, my sampling was based on these two criteria. The four subsamples included two interviews each and were chosen based on the following criteria: (1.) the least and most disruptive *planned* role switches, (2.) the least and most difficult *planned* role switches, (3.) the least and most disruptive *unplanned* role the switches, and 4) the least

and most difficult *unplanned* role switches. Thus, a total of eight interviews were coded in this first phase, four of which focused on planned role switching and four that focused on unplanned role switching.

I open-coded the subsamples of data in this first phase. Open-coding is the process of breaking down, examining, comparing, conceptualizing, and categorizing qualitative data (Strauss & Corbin, 1990). The goal of this open-coding was to identify emergent themes and key words that distinguished the subsamples based on a combination of prior theory, research, and the data itself. While open-coding the four subsamples, I created themes that differentiated the least and most disruptive work intrusions as well as the least and most difficult unplanned roles switches. I compared the frequency of the themes and key words in the subsamples (e.g., across the least and most difficult unplanned role switches) to compare and contrast the experiences, listing similarities and differences (Boyatzis, 1998). The process of comparing the frequencies of key words used for planned and unplanned role switching was used to determine whether unplanned role switching was a different experience from planned role switching. This phase resulted in the development of preliminary themes that distinguished the subsamples (e.g., the most and least disruptive unplanned role switches).

Phase 2: focus coding. I then returned to the subsamples to conduct focus coding (Lofland & Lofland, 1995). Focus coding is the process of examining the codes themselves to determine how useful or productive they are, which helped ensure that I was maximizing the differentiation between planned and unplanned role switching (Boyatzis, 1998). Focus coding may result in collapsing codes, elaborating on codes,

and/or eliminating codes (Lofland & Lofland, 1995). I conducted focus coding by noting the number of times a preliminary theme was present in the subsample data. As a result of the focus coding, I eliminated codes that were not used frequently, I collapsed redundant or overlapping codes, and I elaborated on some codes that were too vague.

Phase 3: axial-coding. The next step was to organize the revised codes according to the procedures of axial coding (Strauss & Corbin, 1998). Axial coding involves grouping data together using a paradigm. The paradigm I used to organize the codes was based on several features of unplanned nonwork-to-work role switching. I organized the codes in relation to context, key characteristics of the process, the underlying conditions (e.g., reasons for responding to intrusions) of the process, the actions taken during the process, and the outcomes. Each code was then structured in a useful and meaningful way, as recommended by Boyatzis (1998). I assigned a label (i.e., name) to each code, and I defined each code (e.g., the charactersticis or issue for the theme). I also wrote descriptions of how and when the code occurred in an unplanned role switching episode, which included indicators of when to flag the code. Additionally, I wrote descriptions of any special conditions or exclusions for each code (i.e., exceptions), and I provided positive and negative examples of each code.

The codes for planned role switches were based on the context (e.g., when and where the intrusion occurred), key characteristics of the role switching process (e.g., type, duration), the underlying conditions of the role switching experience (e.g., reason for the role switch), and the outcomes of the experience (e.g., thoughts and feelings afterward). The codes for the work intrusions were based on context (e.g., when and where the intrusions occurred), causal conditions (e.g., why the intrusions occurred), key

characteristics of the intrusions (e.g., type, source, content, reason for intrusion), and outcomes (e.g., how the interviewees felt afterward and how others reacted). The codes for unplanned role switching were based on context (e.g., nonwork activity at the time, nonwork individuals present at the time), key characteristics of the unplanned role switching process (e.g., type, duration, actions required), underlying conditions of the process (e.g., extent of disruption and difficulty, reasons for disruption and difficulty), and outcomes of the experience (e.g., thoughts and feelings afterward, short- and long-term impact on the interviewees and significant others).

To ensure that the themes accurately captured the participants' experiences, a subject matter expert (SME; i.e., my advisor) reviewed all codes. After sharing some accounts of unplanned nonwork-to-work role switching with the SME, the SME reviewed my themes and codes to confirm that they accurately captured and described the experiences (Williams, Giuffre, & Dellinger, 1999). Some codes were modified based on the SME's feedback. As recommended, I also conducted a participant cross-check (Demerouti et al., 2004) by asking some of the interviewees to confirm that the codes made sense to them and adequately captured their experiences (Lawrence, Gardner, & Callan, 2007).

Once the codes were finalized, I created a template to be used by undergraduate research assistants who would content code the data. In addition to the code definitions, I gathered examples from the raw data that corresponded to each code. The purpose of the template was to help the coders understand each code and provide guidance about when to apply each code to the data. I pilot tested the clarity, relevance, and comprehensiveness of the codes by having an undergraduate research assistant (who would not be involved in

the final coding) use the template to code three interview transcripts. The template was modified slightly based on the results of the pilot coding. In particular, a few code descriptions were clarified, as the original descriptions were found to be too vague.

Inter-rater reliability. Next, the codes were tested for inter-rater reliability (IRR). IRR involves having two coders independently apply codes to the same set of data and then calculating the degree of consistency in applying the codes. A trained undergraduate research assistant and I independently applied the codes to three transcripts, and then I calculated the degree of consistency (i.e., agreement) in our judgments. The first IRR score (i.e., percent of agreement) was 79%. The discrepancies were discussed and resolved. None of the codes were dropped as a result of the first IRR process, but a few of the code descriptions, definitions, and special conditions were refined. Then we coded two more interviews, and I tested for IRR again. For the two additional rounds of IRR, the consistency score was 92%, which was considered acceptable. The final set of codes for unplanned nonwork-to-work role switching and the number of times they were identified in the data are shown in Table 1a. Table 1b shows the mean ratings for the measurement items that were asked at the end of the interviews, which also helped distinguish between planned and unplanned role switching. The full coding template is available upon request.

Final coding. I used the final coding template to code the remaining data (i.e., 12 interviews). See Table 2 for examples of how the data were coded. After all interviews were coded, I examined the code frequencies to see which codes best differentiated the most and least disruptive work intrusions, the most and least disruptive unplanned role switches, and the most and least difficult unplanned role switches. The codes that were

used most frequently for unplanned role switching, but were used infrequently or not at all for planned role switching, showed how the two types of role switching differed in important ways. The codes that best differentiated the two experiences were then used to represent units of meaning in the qualitative data (Miles & Huberman, 1994) that could be translated into measurement items. Thus, I used these codes to specify the construct domain and generate measurement items for describing key characteristics of unplanned nonwork-to-work role switching. The results of the final coding process and item generation are discussed in the following results section.

Study 1 results

Final coding results. Refer to Table 3a for a summary of the themes that best differentiated planned and unplanned nonwork-to-work role switching episodes. Table 3a summarizes the percentages of planned or unplanned nonwork-to-work role switching episodes that were associated with each code. Multiple codes could be applied to each episode. The focus of this study was unplanned nonwork-to-work role switching, and I was able to distinguish between planned and unplanned role switching after my initial coding. Therefore, the full sample of unplanned episodes were coded (n = 18) and only a subsample of planned episodes were fully coded (n = 4). However, the ratings for disruption and difficultly were based on the full sample for both planned and unplanned nonwork-to-work role switching episodes (n = 18; see Table 3b).

By comparing the most common themes for planned and unplanned nonwork-to-work role switching, I found several notable differences between the two types of experiences. First, the context for unplanned role switching tended to be different than planned role switches. When participants responded to work intrusions they were more

likely to be involved in family events or leisure activities (44%), in the process of transitioning from their nonwork roles (11%), or sleeping at the time (6%), as compared to low frequencies associated with planned role switching (25%, 0%, and 0%, respectively). These contextual differences highlighted that when a role transition is arranged ahead of time, such as a scheduled late-night meeting, individuals may be able to schedule their work so that it does not interfere with planned personal activities. Based on the participants' planned role switching experiences, the ability to segment the work role from nonwork roles is critical, as it prevented participants from being distracted while involved in personal activities.

Another key differentiator between the planned and unplanned role switching experiences was that participants typically responded to unplanned work intrusions because of pressure to do so from themselves (72%), pressure from their bosses (50%), feelings that they had no other choice (39%), others' expectations (67%), or others were dependent on them (61%). Pressure and dependence were not factors for planned role switches (0% and 0%, respectively) since the participants had the opportunity to agree ahead of time whether to be involved in work tasks/activities during nonwork hours. Although expectations from others was a somewhat common reason for engaging in planned role switching (50%), the most common reasons for planned transitions were voluntary, as participants mainly wanted to prepare for the next work day (75%) or be more productive (50%).

Additional work tasks were often required following unplanned nonwork-to-work role switching episodes. The behavioral follow-up tasks were mainly emailing someone (44%), gathering more information (44%), or calling someone (33%). Given that planned

role switching episodes were scheduled ahead of time and tended to be part of participants' daily routines, there was no immediate behavioral follow-up. Instead, any additional work required was typically addressed during the next work day.

The psychological aftermath of the unplanned role switching experiences was also different, such that participants tended to ruminate or worry about the work-related issues that had unexpectedly occurred throughout the day (44%), throughout the weekend (17%), or even for a few days (11%). Although some work-related thoughts occurred following planned role switches, the rumination was did not last longer than an hour (0% for all three categories).

All participants were asked to rate the extent to which their planned and unplanned experiences were disruptive to their personal time (see Table 3b). The unplanned role switching episodes were significantly more disruptive (5.39; $t(17) = 5.30$, $p < .001$) than the planned role transitions (3.89). Unplanned role switching was more disruptive because the episodes tended to interrupt personal activities (78%; e.g., participants had to stop what they were doing at the time), negatively impacted the rest of the day in some way (61%, e.g., caused distractions later in the day), occurred during inconvenient times (50%, e.g., happened during an important family event or late at night), or caused mental distractions during personal time (39%; e.g., prevented participants from being present with their significant others). Refer to Table 3a for a complete summary of these frequency results.

Although planned role switches also interrupted participants' personal time (75%), there was less of a negative impact on the rest of the day (25%), the timing was not as inconvenient (25%), and mental distractions occurred less frequently (25%; see

Table 3a). Planned role switches seemed to afford individuals adequate time to arrange their schedules in advance, which enabled them to avoid any negative spillover to the rest of the day. Also, planning ahead allowed them to mentally prepare for performing their work tasks/activities during their personal time, so there was less of a potential to feel mentally distracted during their nonwork hours. Planning in advance also seemed to help them mentally and behaviorally transition back to their nonwork roles.

All participants were also asked to rate the extent to which their experiences were behaviorally and/or mentally difficult (see Table 3b). The unplanned role switching experiences were significantly more difficult (4.94; $t(17) = 2.27$, $p < .05$) than the planned role switches (4.00). The unplanned experiences were difficult mainly because they required participants to make an unexpected mental switch from nonwork roles to the work role (61%). Other common reasons for difficulty included mental drain (50%), inconvenient timing (44%), feelings of distraction (44%), and having to engage in multiple role switches (22%; i.e., had to switch back and forth between work and nonwork roles several times). Planned episodes were not found to be difficult for any of the above reasons, expect for mental drain (25%). The main reason that planned role switches were difficult was that the additional work activities required participants to extend their work days beyond the typical number of hours worked (75%). Refer to Table 3a for these frequency results.

Lastly, the outcomes of unplanned and planned role switching differed. Negative emotions and thoughts followed both planned and unplanned role switching experiences. However, for unplanned episodes, negative thoughts (94%) and emotions (89%) were much more common than positive or neutral thoughts (28%) or emotions (28%).

Furthermore, the negative thoughts and emotions after unplanned episodes were more intense than those following planned episodes. For example, after unplanned role switches, many individuals reported being "pissed," "frustrated," "resentful," or "exhausted," whereas the thoughts and emotions following planned role switches were more about feeling tired and fatigued. Although negative thoughts (75%) and emotions (75%) followed planned role switching, positive and neutral thoughts (50%) and emotions (50%) were experienced as well.

Summary of results. The qualitative findings revealed several important distinctions between planned and unplanned nonwork-to-work role switching. These distinctions were helpful in clarifying how responding to unplanned work intrusions differs in important ways from employees' planned work transitions during their personal time. Furthermore, these findings helped highlight the unique aspects of unplanned nonwork-to-work role switching that should be captured in new measures of the construct.

Based on a comparison of the themes for planned and unplanned nonwork-to-work role switching, the findings suggested that experiences with work intrusions and unplanned nonwork-to-work role switching were particularly disruptive and difficult for these employees. Some of the most critical underlying aspects of unplanned nonwork-to-work role switching were the feelings of pressure, the required follow-up work behaviors, inconvenience, feelings of being interrupted, mental distractions, the inability to mentally and behaviorally prepare for the work intrusions and role switching process, and difficulty in reverting back to nonwork roles following the experiences. Unplanned role switching engendered rumination and intense negative emotions and thoughts following

the experiences. Therefore, these qualitative findings about the nature of employees' experiences with unplanned work intrusions suggest that it is important to learn more about unplanned work intrusions and also suggest some of the reasons for their negative effects on employees (e.g., they contributed to participants having difficulty reverting back to their nonwork roles or activities and difficulty unwinding for bed time).

Item generation: overview. Based on the qualitative research findings showing that unplanned nonwork-to-work role switching differed from planned role switching in many important ways, I created measurement items following Strauss and Corbin's (1990) guidelines. The first step was to assign properties (i.e., attributes or characteristics) to the unplanned role switching codes (e.g., type of responses, reason for response, duration of response, extent of disruption, and degree of difficulty). Then I created dimensional ranges so that the properties of the code (e.g., extent of disruption) could be located on a continuum (e.g., 1 = *not at all* to 7 = *very much*). These properties and dimensions were used to generate measurement items. In addition to using the themes that emerged from my qualitative analysis as the basis for the measurement item wording, I also incorporated relevant concepts from boundary management theory and work-family border theory. Furthermore, I generated items that are succinct and can be easily comprehended, as recommended by Hinkin (1998). Also, I used the codes that described work intrusions to create descriptions and examples of work intrusions during nonwork hours which could be used in the instructions section of the questionnaire.

See Table 4 for the measurement items categorized by a typology recommended by Strauss and Corbin (1998). The categories are context, causal conditions, key

characteristics, underlying conditions, and outcomes. All of these characteristics distinguished the unplanned role switching episodes from the planned role transitions.

Item generation: measures of the context. First, I developed items to assess the context of work intrusions. The contextual items focused on when (e.g., late evening) and where (e.g., home) the intrusion occurred, who was with the individual at the time of the intrusion (e.g., significant other), and the nonwork activity an individual was engaged in at the time of the intrusion (e.g., child care). I also created measurement items for assessing characteristics of the intrusions. These items asked about who caused the intrusion (e.g., boss), the nature of the intrusion (e.g., request for help), and the mode of intrusion (e.g., email). Additionally, I developed measurement items to assess various characteristics of work intrusions on a continuous scale, such as how important the intrusion was perceived to be by the individual (1 = *not at all* to 7 = *very much*) and the degree of perceived pressure to respond from various sources (e.g., from oneself; 1 = *not at all* to 7 = *very much*).

Item generation: work intrusion scales. I created a one-item measure to assess whether an individual immediately responded to the intrusion: "Did you ignore (i.e., choose not to respond to) the work intrusion?" (1 = *no*, 2 = *yes*). I designed four scales to assess various characteristics of unplanned nonwork-to-work role switching. The first scale was a 6-item measure of the type of unplanned role switching (e.g., "If did not ignore the intrusion, how did you respond: Answered a phone call?"; 1 = *no*, 2 = *yes*). The second scale was a one-item open-ended measure of response duration ("How much time did you spend responding to the intrusion?"). The third scale was a 14-item multidimensional measure of the response to an intrusion, which included automatic

response (e.g., Indicate the extent to which your response to the intrusion was: Automatic; 1 = *not at all* to 7 = *very much*), response interference (e.g., To what extent was your immediate response to the intrusion: Inconvenient?; 1 = *not at all* to 7 = *very much*), and response difficulty (e.g., To what extent was your immediate response to the intrusion: Mentally draining?; 1 = *not at all* to 7 = *very much*). The fourth scale was a multidimensional measure of the outcomes of unplanned nonwork-to-work role switching, including response follow-up (e.g., After responding to the intrusion, to what extent did you: Worry about work?; 1 = *not at all*, 7 = *a great extent*) and response impact (e.g., Indicate the extent to which your response to the intrusion negatively impacted any of the following individuals today: Yourself; 1 = *not at all* to 7 = *a great extent*). To assess the affective outcomes of unplanned role switching, I used a previously established six-item measure of negative affect (Watson et al., 1988).

Study 1 discussion

Overview. The primary goals of Study 1 were to (1.) better understand the construct of unplanned nonwork-to-work role switching, (2.) determine how it is different from planned nonwork-to-work role switching, and (3.) develop measurement scales for the construct. According to Hinkin (1998), the first step in scale development is to specify the content domain of a construct. I followed this recommended first step by taking a data-driven inductive approach to understanding unplanned nonwork-to-work role switching. I used the CIT (Flanaghan, 1954) via semi-structured interviews with employees to gather rich qualitative data about participants' experiences with unexpected work intrusions and how they responded to the intrusions. As recommended by Boyatzis (1998), I analyzed the qualitative data by developing themes and codes to capture the key

characteristics of the planned and unplanned role switching episodes. Then, by examining the frequencies of the codes for each role switching experience, I identified the most critical aspects of unplanned role switching that distinguished it from planned role switching. The codes that corresponded to these critical aspects were then used to define the construct and develop measurement items. Based on the qualitative results, I define unplanned nonwork-to-work role switching as the response to an unexpected work intrusion by temporarily shifting from a nonwork role to the work role during nonwork hours while in a nonwork location.

As expected, the qualitative data provided insights about several key aspects of unplanned nonwork-to-work role switching that helped differentiate it from planned nonwork-to-work role transitioning, including: (1.) contextual factors (e.g., current nonwork activity), (2.) causal conditions (e.g., external pressure to respond), and (3.) underlying conditions (e.g., extent of disruption). These findings helped me develop several measurement scales to capture key aspects of unplanned nonwork-to-work role switching. My qualitative analysis also revealed several negative outcomes of unplanned nonwork-to-work role switching for participants, which highlighted the importance of studying this construct.

The following sections of the discussion will focus on how unplanned nonwork-to-work role switching differs from planned role transitioning, how the findings contributed to the objectives of construct and scale development, and the importance of studying unplanned nonwork-to-work role switching. In the General Discussion (beginning on p. 205), I will discuss how the qualitative findings contribute to and extend

prior boundary management theory and role transitioning literature, as well as how these findings relate to other aspects of the research.

Qualitative findings: context, causal conditions, and underlying conditions. Ashforth et al. (2000) noted that role transitions are embedded within a context, so first it was necessary for me to understand whether there were any relevant situational factors that influenced unplanned role switching experiences. One situational factor that distinguished unplanned nonwork-to-work role switching from planned role switching was that unplanned role switching typically interrupted personal activities. In contrast, since planned role switching allowed individuals to schedule work activities in advance, participants were not heavily involved in nonwork activities at the time of the transitions. This contextual difference implied that unplanned nonwork-to-work role switching does not give individuals adequate time to arrange their schedules or organize their days in advance so that personal activities are not interrupted.

For the causal conditions of unplanned nonwork-to-work role switching, almost all participants reported pressure as a reason for engaging in the work role in response to work intrusions. Whether it was internal (i.e., from oneself) or external (e.g., from a boss), pressure was a key differentiator between planned and unplanned nonwork-to-work role switching experiences. Most commonly, pressure from a supervisor influenced employees' decisions to respond to unexpected work intrusions. Furthermore, expectations from senior leadership and organizational norms were cited as reasons for responding rather than ignoring unexpected intrusions. These findings suggest that a critical causal condition of unplanned nonwork-to-work role switching episodes is the perceived pressure to respond to a work intrusion, particularly from one's boss.

There were several important underlying conditions of unplanned nonwork-to-work role switching that suggested it was a different experience than planned role switching. Unplanned nonwork-to-work role switching was reported as significantly more disruptive to personal time compared to planned role switching. The main reason for disruption was the inconvenient timing of the episodes. The inconvenience of having to unexpectedly engage in role switching seemed to disrupt participants' current frame of mind and their current nonwork activities/tasks. In contrast, planned nonwork-to-work role transitions were not described as inconvenient, but more so as an expected part of the participants' daily routines.

These findings can be explained by role strain theory (Goode, 1960) and also underscore the importance of temporal and psychological boundaries when distinguishing the conditions of planned and unplanned role switching. The unpredictability of work intrusions does not give employees a chance to mentally prepare for unexpectedly switching roles while in their nonwork roles. According to role strain theory, when a work demand permeates the borders of the nonwork domain during nonwork hours, the strain associated with the work role makes it difficult to meet the expectations of the nonwork role, thereby creating feelings of disruption or interference. Since unplanned role switches do not give individuals time to mentally prepare for unexpected work activities, there is great potential for feeling disrupted or mentally distracted.

When participants engaged in unplanned nonwork-to-work role switching, they also reported significantly more difficulty reverting to their nonwork tasks/activities compared to when they engaged in planned role switching. Perhaps the inability to plan nonwork-to-work role transitions in advance prevents individuals from mentally and/or

behaviorally easing back into their nonwork roles. Also, having to quickly and abruptly shift back and forth between nonwork and work roles seems to require considerable time and energy. The energy component seems to be both mental and physical, as some participants reported that they needed time to mentally switch gears and to "unwind" by physically relaxing following an unplanned role transition. Thus, transitions that require quick and unexpected switching back and forth between work and nonwork roles during nonwork hours seem to be more difficult, mentally and physically, than planned transitions during nonwork hours.

Qualitative findings: outcomes. Another important finding of Study 1 was how unplanned nonwork-to-work role switching negatively affected individuals, and how these outcomes were different than the outcomes of planned role transitions. These findings are extremely important, as they help to justify the importance of the present research and its focus on unplanned work intrusions and role switching, and they clarify why intrusions may negatively affect employees. More specifically, the psychological aftermath of unplanned nonwork-to-work role switching was found to differ from that of planned nonwork-to-work role switching. Following unplanned nonwork-to-work role switching, employees reported more intense negative effects, such as negative thoughts and emotions, compared to when engaging in planned role transitions. Individuals reported ruminating or worrying about the work-related issue to a much greater extent after engaging in unplanned role switching experiences compared to planned role transitions. Additionally, after engaging in unplanned role transitions, employees reported more fatigue, exhaustion, annoyance, and frustration compared to when they engaged in planned transitions.

The resource drain model (Edwards and Rothbard, 2000) and the effort-recovery model (Meijman & Mulder, 1998) help explain why the outcomes differed for the two types of role transitions. Work and nonwork roles were blurred in both situations; however, the blurring of roles was greater for unplanned role switching since individuals had to quickly shift between different mental and behavioral frames of reference without any preparation or warning. This rapid shifting between thought patterns and behaviors in response to work intrusions requires unexpectedly expending more physical and mental resources that have already been exhausted during the work day. In comparison, employees who engage in planned transitions are aware that they will have to expend additional resources in their work role during their nonwork hours, so they can plan to reserve the necessary resources. Thus, it seems that it is the unexpected use of personal resources during nonwork hours that is particularly draining for individuals and may engender negative thoughts and feelings, and perhaps other lasting negative consequences. The potential for negative outcomes following unplanned nonwork-to-work role switching warrants further investigation. Thus, the findings of Study 1 supported my plan to test affect, interference between work and nonwork roles, burnout, and physical health as outcomes in Study 3.

Conclusions. Based on the qualitative results, I define unplanned nonwork-to-work role switching as the response to an unexpected work intrusion that involves temporarily shifting from a nonwork role(s) to the work role during nonwork hours while in a nonwork location. The critical aspects of unplanned nonwork-to-work role switching are: (1.) that it occurs within a nonwork location where resources are already being expended on nonwork tasks/activities, (2.) the unplanned nature of the behavior, such that

an individual must abruptly change frames of reference, thought patterns, and behaviors in order to address a work intrusion, and (3.) the difficulty in having to unexpectedly disengage from the nonwork role, engage in the work role, and then re-engage in the nonwork role during a short period of nonwork time (Ashforth et al., 2000). The unplanned nature of unplanned nonwork-to-work role switching may prevent employees from having adequate time to detach from their work roles and recover from job demands during their personal time, which can drain resources and ultimately lead to negative outcomes. The difficulty involved in having to re-engage in the nonwork role after switching roles consumes more personal resources in addition to the resources that were already expended by having to unexpectedly engage in the work role during nonwork hours. Thus, the depletion of mental and/or physical resources may negatively impact employees' affect and health.

Scale development. By identifying the critical characteristics of unplanned nonwork-to-work role switching including the aspects that distinguish it from planned role transitions, the results of Study 1 helped me determine several dimensions to include in my measures of unplanned nonwork-to-work role switching. Measuring several different dimensions of unplanned nonwork-to-work role switching is important for ensuring that the entire content domain of the construct is covered. Study 1 results indicated that not only must the underlying conditions of unplanned nonwork-to-work role switching be measured, but that it is also necessary to examine the context, causal conditions (e.g., characteristics of the intrusions), and outcomes of this process.

The most important contextual variables are the time of day, day of the week, who is with the target individual, the nonwork location, and the type of nonwork activity that

is being disrupted at the time of the intrusion. The causal conditions are the characteristics of the work intrusion (e.g., source, type, importance), especially the perceived pressure to respond to the intrusion. The most important underlying conditions of the process were its unexpected and unpredictable nature as well as the required physical and mental effort to switch back and forth between roles. I created multiple measurement scales to capture these aspects of the unplanned role transitioning process. For example, I created scales to measure various intrusion characteristics as well as unplanned role switching mental difficulty and physical effort. Hence, I was able to accomplish a key objective of Study 1, which was to create measurement scales of unplanned nonwork-to-work role switching that could be used in my subsequent studies.

Limitations. There were a few limitations to this study that should be addressed in future research. First, the sample size was small. The coding process could have been more rigorous if there had been more subsamples to code for preliminary themes and then more subsamples to use for pilot coding and reliability checks. Also, a larger sample size would allow for more systematic analysis of the final code frequencies across all interviews. A larger sample size might also ensure better coverage of the content domain of unplanned nonwork-to-work role switching. Future research could use the interview protocol I developed and add to the existing sample so that more interviews can be coded, more themes can possibly be created, and more analyses can be conducted to examine which codes and themes are most common across a wider range of unplanned nonwork-to-work role switching experiences. Additionally, a more diverse sample of participants should be studied with a wider age range and more job industries. However, across the 18

interviews, the unplanned role switching experiences were rather consistent, suggesting that interviewing more individuals would not necessarily uncover new information.

A second limitation was my sampling technique. I employed a convenience sampling method, which could lead to some biases and threats to validity during the interview process. For example, since I had personal relationships with some of the interviewees, there may have been a social desirability effect thus resulting in less candid responses. Future research should employ a random sampling technique to ensure that participants do not have personal relationships with the interviewer(s). Another limitation was using a single interviewer to conduct all 18 interviews, which could also lead to biases. For example, after having conducted several interviews, it is possible that I asked some leading questions. Yet, having the same researcher conduct all interviews certainly increases the reliability of the methodology, such that there was very little inconsistency in how the interviews were conducted.

Another methodological limitation of Study 1 was conducting more than half of the interviews via telephone rather than in-person. In-person interviews may create a potential for a reactive measurement effect, such that interviewees are fully aware that they are being observed by me and that I was taking notes. However, telephone interviews prevented me from observing the interviewees' body language and facial expressions. Also, telephone interviews were not as personal and therefore may have deterred interviewees from fully disclosing information to me. Another methodological limitation was my inability to gather multisource data, such as the perspectives of the participants' significant others. By gathering data from the employees' spouses or partners, I could have gained a better understanding of how unplanned nonwork-to-work

role switching impacts not only the focal participants, but also their significant others, including their children, if any. Use of multisource data is recommended for future research to help ensure full exploration of the content domain of unplanned nonwork-to-work role switching, and also identification of other potential outcomes that extend beyond the target participant.

Lastly, the introduction to the interview and the initial interview questions may have been too structured. More specifically, since the word "intrusion" has a negative connotation, using this word in the interview protocol may have primed interviewees to think about negative experiences with unexpected work intrusions, when in fact there may be instances when work unexpectedly permeates the nonwork domain in a positive manner, such as when an individual receives an email with good news about a project or his/her job. Thus, future qualitative research should ask interviewees about times when work unexpectedly permeated, rather than intruded, on their nonwork time while in nonwork locations. Furthermore, the interviewer may ask interviewees to discuss both positive and negative experiences of work permeations into their nonwork domains.

Study 1 summary. Overall, my qualitative analysis provided insights into an important phenomenon that has not been well understood previously in the role transitioning literature. More specifically, the findings helped uncover new information about the (unobservable) underlying processes associated with unplanned nonwork-to-work role switching. My approach also helped ensure that the conceptual domain of unplanned nonwork-to-work role switching was well defined and distinguished from planned role transitioning. Lastly, I was able to use my qualitative data to create measurement scales of various aspects of unplanned nonwork-to-work role switching that

were then used in subsequent studies. The next step in the present research was to have interviewees and SMEs provide feedback on my newly development measurement scales, as described in Study 2 (chapter 4).

Chapter 4: Study 2

Study 2 methodology

The purpose of Study 2 was to refine the measurement scales developed in Study 1 by assessing the extent to which the scales items and response scales were clear and easy to understand and covered the content domain of unplanned nonwork-to-work role switching. This approach was in line with Hinkin's (1998) guidelines for measurement scale development. My objectives were achieved by gathering feedback on the clarity and conceptual coverage of my newly developed questionnaire instructions and items from interviewees and subject matter experts. The feedback obtained from interviewees and SMEs allowed me to refine the measurement scales as needed.

Participants. Using Schiesheim and colleagues (Schiesheim et al., 1993) technique, I pilot tested my measurement items with a small sample of interviewees and SMEs. Since the interviewees' experiences with unplanned nonwork-to-work role switching were used to develop my measurement items, they were able to provide feedback on whether my measurement items adequately captured their experiences and were easy to understand.

It was also important to include subject matter experts (SME) to help ensure that my measurement items adequately covered the conceptual domain of unplanned nonwork-to-work role switching. To qualify as an SME, individuals had to have recently conducted work-life research, recently published a study focused on work-life issues, and/or be in the process of conducting work-life research. Four SMEs participated in Study 2. All four SMEs had a Ph.D. degree in Industrial/Organizational Psychology.

Three of the SMEs were employed in academic settings and one worked as a senior consultant for a survey research firm.

Procedure with interviewees. At the end of some of the interviews that were conducted in Study 1, I briefly explained to interviewees the purpose of Study 2 and asked whether they were willing to participate in evaluating my new measurement scales. Most interviewees agreed to participate in the follow-up study. I selected three interviewees with different job levels (individual contributor, manager, and director) and who worked in different industries (service, healthcare, and finance). These three interviewees were formally invited to participate in Study 2 at a later date. This formal invitation included the consent form (see Appendix C) and the feedback form for evaluating the new measures.

The interviewees were provided with the questionnaire instructions and were asked to comment on the clarity (e.g., readability and comprehension) of the instructions, taking into account any unclear meanings, jargon, awkward wording, or double-barreled wording. They also rated the clarity of the instructions using a seven-point Likert scale (1 = *very unclear* to 7 = *very clear*). Interviewees also rated the clarity of the questionnaire items and corresponding response scales (1 = *very unclear* to 7 = *very clear*). If they provided a rating of three or less, interviewees were asked to provide an explanation for the rating. Lastly, interviewees were asked to provide comments on the applicability (e.g., relevance) of the item wording to employees like themselves.

Procedure with SMEs: SMEs were invited to participate by receiving an e-mail invitation (see Appendix D) from me explaining the study purpose. This invitation included a consent form (see Appendix E) and feedback questionnaire. The feedback

questionnaire included the definition of nonwork-to-work role switching and definitions for some of the key terms. Refer to Appendix F for the feedback questionnaires. Similar to the interviewees, SMEs were asked to comment on and rate the clarity of the questionnaire instructions, questionnaire items, and corresponding response scales (1 = *very unclear* to 7 = *very clear*). Additionally, SMES were asked to indicate the extent to which they agreed that each scale item and corresponding response scale conceptually matched the unplanned role switching definition on a seven-point Likert scale, 1 = *strongly disagree* to 7 = *strongly agree* (Schiesheim et al., 1993). If an item was given a rating of three or less, they were asked to provide an explanation for the rating. Lastly, SMEs were asked to comment on whether any items were overly redundant.

Study 2 analysis

I calculated two average clarity scores for the questionnaire instructions, each measurement item, and each response scale, separating interviewee and SME ratings. I also calculated an average coverage score for each item and each response scale, based on the SME ratings. Items with a mean clarity or coverage score of 3.0 criteria were to be rewritten or eliminated, as these items were likely to be difficult to understand or did not adequately map to the conceptual definition of unplanned nonwork-to-work role switching (see Bennett & Robinson, 2000). I also examined the open-ended comments regarding the applicability of the items and potential redundancies. To ensure that items were applicable to employees and that there were no redundant items, suggestions for revising, adding, or removing items were taken into consideration, especially for items that had low mean scores for clarity or coverage.

Study 2 results

See Table 5a for the interviewee and SME mean clarity ratings for the scale instructions, items, and response scales. The instructions, items, and responses scales all received mean clarity scores above 3.0, so none of the content was re-written based on this criterion. See Table 5b for the mean coverage item ratings. However, the instructions, several items, and some response scales were modified based on the participants' open-ended comments.

Table 5c shows the instructions, items, and response scales that were revised, including the original and revised versions. Table 6 shows the final measurement scales. Most of the revisions were based on SME ratings and comments. Thus, the item revisions that I describe next are based on SME feedback, unless otherwise noted. The results are presented according to the order of the items in the questionnaire.

Based on both interviewees' and SMEs' comments about the clarity of the instructions, I added definitions for key terms that are used throughout the questionnaire. I added definitions for nonwork hours, nonwork location, unexpected work intrusions, and types of work intrusions.

A measurement item that asked about follow-up work done following an intrusion was modified to make it clear that the item was assessing follow-up work that was done during the participant's personal time. The original item text was: "How much time did you spend responding to the intrusion? (use minutes and hours, e.g., 15 minutes or 1 hour and 10 minutes). Do not include any further follow-up work that was done later on." The modified text reads as: "About how much personal (i.e., nonwork) time did you spend today responding to this particular intrusion by doing the above activities/tasks? (Use

minutes and hours, e.g., 15 minutes or 1 hour and 10 minutes). IMPORTANT: Include any further follow-up work that was done later in the day during your personal time."

Some of the lead-in text that appeared prior to measurement items was revised. For example, the following lead-in text was unclear: "Whether or not you responded, indicate the extent to which you felt that your response was: Demanded by the person causing the intrusion." Using the terminology "your response" may be confusing for a participant if s/he did not actually respond to the intrusion. So, prior to asking whether a response was demanded or expected, an additional item was added: "Did the intrusion require a response from you?" This new item was followed by the new lead-in text for the next set of items: "To what extent did you feel that a response on your part was: Demanded by the person causing the intrusion?" Similar revisions were done for the lead-in to a set of questions asking about perceived pressure to respond.

One item that was somewhat unclear was re-written to eliminate the parentheses that followed the core part of the item text. The item was: "After responding to the intrusion, to what extent did you think about work (but did not worry or ruminate)?" The new item text reads as: "After responding to the intrusion, to what extent did you think about work in a neutral or positive manner?"

The definition for a word in a particular item was somewhat unclear to an interviewee. More specifically, in the following item it was not clear what "automatic" meant: "Indicate the extent to which your response to the intrusion was: Automatic." So, an explanation was added in parentheses: "Indicate the extent to which your response to the intrusion was: Automatic (i.e., you didn't even have to think about it)."

One item asked about whether there was a response to the intrusion: “Did you ignore (i.e., choose not to respond to) the work intrusion?” This item was unclear, as an individual might ignore an intrusion temporarily and respond to it a later time. Therefore, the item was revised to read as, “Did you react to the intrusion in any way? IMPORTANT: Even thinking about work, listening to a voicemail, or reading an e-mail or text is considered a reaction. Select "No" only if you completely ignored the intrusion.).”

An “other” response option was added to several response scales, such as the following: “Who caused the work intrusion?” (1 = *co-worker/colleague*, 2 = *subordinate*, 3 = *boss/manager/supervisor*, 4 = *client/customer*, 5 = *other*). One response scale was changed from a categorical response scale to an open-ended response. The item was: “When did the unexpected work intrusion occur? (1 = *early morning*, 2 = *morning*, 3 = *afternoon*, 4 = *evening*, 5 = *late evening*, 6 = *during the middle of the night*). Since participants may have different definitions of what is considered “early morning” vs. “morning,” I changed the response scale to open-ended, and then planned to code the responses into appropriate categories.

One item that did not seem to add much value to the questionnaire was removed, from both the SME and interviewees’ perspectives. The item asked about the extent to which a work intrusion was expected. Since “work intrusion” was defined as an unexpected event, then it was not necessary to ask participants how “expected” the intrusion was. I also removed a set of items that assessed the extent of an intrusion’s positive impact on others. Since most participants were expected to provide low ratings

on this item, the restricted range of responses would most likely not add any value to the measurement of the outcomes of unplanned nonwork-to-work role switching.

Within the questionnaire section that addressed the types of responses to a work intrusion, one item was added to measure a psychological response: "Thought about it." A few other items were added to this section to measure more behavioral responses to intrusions, for example: "Read an email or text message on your Smartphone." Another set of items that seemed irrelevant to the definition of unplanned nonwork-to-work role switching, according to both SMEs and interviewees, asked about activities that were preformed after the role switching occurred, for example: "After responding to the intrusion, how much time did you spend: Emailing colleagues, team members, or subordinates?" These seven items were removed to help reduce the length of the questionnaire.

Some items were removed specifically because of redundancy. Three items were eliminated that assessed the extent of mental and physical difficulty required to switch roles, as they were redundant with other items measuring difficulty. See Table 5c for the three items that were removed. Five items that assessed the outcomes of unplanned role switching were removed, for example: "After your immediate response to the intrusion, to what extent did you do the following today during your nonwork hours: Brainstorm work ideas?" See Table 5c for the five items that were removed. These items were replaced with the following set of items: "To what extent did the following occur today during your nonwork hours because of this particular work intrusion: 1) Had negative thoughts about work today because of intrusion?, 2) Had positive thoughts about work

today because of intrusion?, and 3) Thought about work in neither a negative or positive way today because of intrusion?"

Based on comments about the relevance of the measurement items to today's employees, several other items were removed. Removing items also helped reduce the length of the questionnaire, which was important considering it would be administered daily for seven days.

SMEs also provided valuable feedback on the format of the questionnaire. Originally, the questionnaire was formatted such that an individual who did not experience any work intrusions on a particular day would only have to respond to one item asking how many unexpected work intrusions were experienced that day. However, due to the potential reluctance for participants to complete the questionnaire each day, this format could potentially lead participants to under-report the number of intrusions experienced, so that they would not have to complete the full questionnaire every day. Therefore, I created an alternate form of the questionnaire of somewhat similar length for participants who did not experience any intrusions or only one intrusion on a particular day. This version of the questionnaire contained several additional items asking about the participants' work day and personal time at home, which were used to lengthen this alternate version of the questionnaire. These items and all final scales are listed in Table 6.

Once the questionnaire was refined and finalized (see Table 6), I created a partner version of the questionnaire based on a subset of items. This questionnaire was designed to assess the spouse/partner's perceptions of the focal participant's unplanned role switching experiences.

This additional source of data would allow me assess the accuracy of the focal participants' self-report data. See Appendix K for the measurement items included in the all questionnaires for both the target and spouse/partner.

Chapter 5: Study 3

Study 3 methodology overview

The first part of Study 3 was a pilot test of the daily questionnaires. For this pilot test I assessed the user-friendliness and length of the daily questionnaire. The main part of Study 3 involved an examination of the psychometric properties of my new measures (reliability, dimensionality, and discriminant validity) and testing of a nomological network of variables surrounding unplanned nonwork-to-work role switching (Hinkin, 1998).

Also in the main study, I took some initial steps to test a nomological net by examining relationships between unplanned role switching and my proposed antecedents and outcomes. This part of my research helped me determine the extent to which unplanned role switching was related to variables derived from theory (Cronbach & Meehl, 1955; Hinkin, 1998), such as boundary management theory (Ashforth et al., 2000). In particular, I investigated whether characteristics of jobs or individuals were related to unplanned role switching. For the employee outcomes, I examined whether unplanned role switching was associated with employees' work-life experiences and their psychological and physical health. I also explored whether unplanned nonwork-to-work role switching was related to several episodic variables that emerged as important in Study 1 (i.e., contextual variables and intrusion characteristics).

Study 3 pilot test methodology and results

Pilot test participants. For pilot testing the daily questionnaire, I employed a convenience sample of eight participants. These participants had to meet the same criteria

that were used to recruit interview candidates in Study 1. Their feedback allowed me to refine the design of the daily questionnaire.

Pilot test procedures. The pilot test materials were the pre- and post-questionnaires, which included my antecedent and outcome measures. However, the pilot test was mainly designed to assess the user-friendliness (e.g., reasonable length) of the daily questionnaire, which included my new measures. The participants were contacted via an informal e-mail to participate in a four-day pilot study. The e-mail invitation included the purpose of the pilot study and a link to the consent form. Upon submitting the consent form, participants were transferred to a webpage that provided guidelines to help them determine if it was an appropriate time period to participate in the study. If they were ready to participate, they clicked a button to continue to the online pre-questionnaire. Participants completed the pre-questionnaire on day one of the pilot study. At the end of days one, two, and three they received daily e-mails from me with links to the daily online questionnaire. The daily questionnaires were completed at the end of each day around their bedtime. One day after the three-day study period ended, an e-mail was sent to each participant with a link to the final online questionnaire. The post-questionnaire included an open-ended question asking for their feedback on all questionnaires. They had five days to complete the final questionnaire and received two e-mail reminders. Refer to Appendix G for the e-mail invitation, consent form, and study guidelines for the pilot study. All other study materials were identical to the materials used in the main part of Study 3.

Pilot test results. I only analyzed the frequency data from the pilot study, as it was based on only eight participants. The numeric responses to the questionnaire items were

examined to ensure that there were no items with a high percentage of missing responses, as that might have indicated that an item was difficult to interpret or answer. I also examined the responses to the open-ended feedback question. Based on the feedback, only one modification was made to the daily questionnaire. The pilot daily questionnaire required participants to complete the same set of daily questions for *three* different reported work intrusions that may have occurred that day. The pilot participants' feedback about the length of the daily questionnaire indicated that the questionnaire was too long. In particular, having to respond to the same set of questions three times in one day was time-consuming and inconvenient. Thus, I shortened the daily questionnaire by limiting it to reports of only two work intrusions each day.

Study 3 methodology

Participants. The participants for the main part of Study 3 met the following criteria: employed full-time, held only one paid job, not a small-business owner, not self-employed, and lived with a spouse or partner with whom they spend a majority of their nonwork time. Participants were recruited via a ZoomPanel sample (zoomerang.com), which is a group of more than 2 million individuals who have agreed to take online surveys. These sample members have all agreed to participate in survey research and receive an incentive for completing surveys. All survey participants have a demographic profile (e.g., marital status, work status, etc.) and assigned occupational characteristics (e.g., employment status, job level, job type, etc.), such that researchers can specify desired demographic characteristics for their research participants.

ZoomPanel employs several verification processes using various technologies to ensure that each prospective respondent is real, unique, and engaged. Objective criteria

are used to validate the accuracy of respondent profile information, the uniqueness of the responders (e.g., no study has duplicate survey-takers), and the quality of the respondents (e.g., no "speeders"). To confirm the authenticity of the panelists, demographic information is verified against extensive databases with objectively validated demographics, such as those used by consumer financial services. As a result of this process, approximately 20 percent of panelists are turned away. To confirm that respondents are unique, ZoomPanel uses digital fingerprinting to eliminate and blacklist fraudulent respondents. This technology enables ZoomPanel to determine whether a given respondent is a duplicate or a professional survey-taker, and these undesirable respondents are eliminated from the database. Lastly, to ensure that respondents are engaged in the survey process, ZoomPanel correlates survey-taking time and response patterns to identify fraudulent behavior and remove offenders from the data set and the panel. I also included demographic questions as part of my pre-questionnaire to verify that participants met my sample criteria.

Before finalizing my sample, I checked to make sure that the spouses/partners were physically present with focal employees for at least one hour each day during the study period. This was important to ensure that the spouse/partners could provide accurate estimates of the focal employees' intrusions and unplanned role switching behavior. A total of 15 dyads were removed from my sample because the spouses/partners were with the focal employees for less than seven hours during the entire daily study period. I also examined the overall correlation between the focal employees' and spouses/partners' ratings of unplanned role switching frequency to determine whether there was general agreement across the sample. A significant positive

correlation (r = .82) indicated overall agreement between focal employees' and spouse/partners' reported unplanned role switching frequency.

The inter-rater agreement between the focal employees and the spouse/partners was tested by calculating rwg_j (e.g., Streich et al., 2008). The rwg_j is a measure of perceptual agreement that conceptually indicates the degree to which ratings are the same (e.g., both raters select "not at all"; Bliese, Klein, & Kozlowski, 2000). There are no established recommended cutoff values for the rwg_j, as it depends on the number of items in a scale (Kline & Hambley, 2007). Streich et al. considered their rwg_j value of .79 to be acceptable given their 5-item measurement scale. My measure of unplanned role switching frequency was one-item based on the aggregated number of unplanned role switching episodes during the daily study period. Since there were seven opportunities (i.e., days) to report an episode during the study period, I established a cutoff value of .50, which means there had to be at least 50% agreement between the focal employee and the spouse/partner. A total of four dyads were removed from my final sample because their inter-rater agreement was below .50.

My final sample size consisted of 68 focal participants who experienced at least one unexpected work intrusion during the daily study period. Twenty-nine participants were male and 39 were female. All participants were living with a spouse, partner, or significant other, so the final sample included a total of 68 dyads. All participants were full-time employees working at only one paid job. None of the participants were small business owners, self-employed, or temporary/contract employees. Seventy-two percent of the dyads were dual-earners, with 56% of the participants having a full-time working spouse/partner and 16% with a part-time working spouse/partner. The number of children

living with participants ranged from zero to five, with 25% of participants having at least one child under the age of five. Ninety-four percent of participants identified as heterosexual, 4% identified as gay/lesbian, and 1% identified as bisexual. Organizational tenure ranged from one to six years, with an average tenure of 4.65 years. The average number of weekly work hours was 42.3, ranging from 22 to 64 hours. Annual salaries ranged from $13,000 to $140,000, and the average annual salary was $56,937. The primary work location for 94% of the focal participants was an office, work building, or factory. Four percent worked at a client/customer site and only 2% worked in a home office.

The participants were fairly likely to experience unexpected work intrusions during their nonwork time, as many of them worked in interdependent jobs. Sixty-eight percent of participants regularly worked with a team/work group, 71% regularly worked with internal and/or external customers/clients/vendors, and 88% reported directly to a manager/supervisor. Participants were also likely to experience work intrusions through technology, as their average percent of daily time spent using communicative technology as part of their jobs was 52%.

Procedures. Zoomerang recruited ZoomPanel sample members via e-mail to participate in my study. The e-mail invitation included an explanation of the study's purpose and the participation requirements. Potential participants were informed that they would receive their typical incentive from Zoomerang for completing the pre-questionnaire and that a bonus incentive of $25 would be provided by the researcher if they and their spouse/partners participated in the entire ten-day study. The email also

included links to two consent forms (focal employee and spouse/ partner versions). See Appendix H for the email invitations and Appendix I for the consent forms.

Once the focal employees read, signed, and submitted the consent forms, they were transferred to a webpage with four demographics questions. These four questions verified that the participants were living with a spouse or partner, working full-time, worked only one paid job, and were not small-business owners or self-employed. If they did not meet these criteria then they were transferred to a webpage that explained their ineligibility and were thanked for their time. If they met the criteria, they were transferred to a webpage with the study guidelines (see Appendix J), which outlined what is considered an appropriate time period to participate in the research (e.g., during a typical one-week work period). If the focal employees were ready to participate in the study, then they clicked a button to continue to the pre-questionnaire. Participants completed the pre-questionnaire at any point on day one of the study period. This questionnaire included all of the antecedent measures except work role overload, demographic questions, and control variables that were assessed on a daily basis.

As part of this first questionnaire, participants were asked to indicate their time zone so that the daily e-mail invitations could be delivered to them at an appropriate time in the evening. They were also asked to provide their email addresses and their spouse/partners' email addresses so that I could contact them directly for the remainder of the study.

To verify that participants met my sample criteria, the pre-questionnaire included four demographic questions. First, I needed to ensure that participants were married or co-habitating so that I could gather multisource data; therefore, participants provided

information on their *living arrangement* by indicating whether they were currently living with a spouse, partner, or significant other (1 = *yes*, 2 = *no*).

To ensure that my results could be generalized to typical full-time employees, I asked a series of demographic questions about employment. Participants indicated their employment status (1 = *part-time*, 2 = *full-time*) and whether they were working only one paid job at the time (1 = *yes*, 2 = *no*). Each participant also indicated whether s/he was a small business owner (1 = *yes*, 2 = *no*), self-employed (1 = *yes*, 2 = *no*) or a temporary/contract employee (1 = *yes*, 2 = *no*).

To ensure that participants were likely to experience work intrusions, I inquired about whether they worked in interdependent jobs (i.e., jobs in which they depended on others or others depended on them to meet daily work objectives) using the following three questions: (1.) "Do you regularly work with a team/work group?" (1 = *yes*, 2 = *no*), (2.) "Do you regularly work with customers (internal or external to the company), clients, or external vendors?" (1 = *yes*, 2 = *no*), and (3.) "Do you regularly report to a manager or supervisor?" (1 = *yes*, 2 = *no*).

To ensure that any employees with atypical work arrangements were not included in my sample, I also asked whether participants were home-based workers or frequent telecommuters (i.e., work no more than one day, or eight hours, in a nonwork location each week) by asking three questions: (1.) what is the primary location in which regularly scheduled work hours are performed (1=*Office/work building/factory*, 2= *Client/customer's work site*, 3=*Home office*, 4= *Other remote location (e.g., coffee shop, library, park)*), (2.) how many regularly scheduled work hours are performed in that nonwork location during a typical week, (3.) how many regularly scheduled work hours

are performed in any nonwork locations (e.g., home) during a typical week. They were also asked about their extent of *technology use* by indicating the percent of the work day spent using communicative technology (e.g., PDA, tablet) and/or computer technology (e.g., Internet, e-mail, etc.).

As part of the pre-questionnaire, participants provided information on their typical work hours, which was used to confirm that the work hour totals provided in the daily questionnaire were accurately reported. In the pre-questionnaire, I asked participants to provide the number of hours that they worked in their traditional workplace that week as well as beyond their traditional workplace that week (open-ended). I also asked them to provide the number of hours they typically work in their traditional workplaces and beyond their traditional workplaces during a typical week (open-ended).

Following the completion the first questionnaire and the providing of email addresses, each evening during the one-week survey period I sent e-mails to the focal participants and their spouse/partners with links to their respective versions of the daily questionnaires at an appropriate time. Participants were informed that this questionnaire should be completed at the end of their day (i.e., their typical bed time). This daily questionnaire included measurement scales for work hours, unexpected work intrusions, the context of the unexpected work intrusions, unplanned nonwork-to-work role switching, work role overload, negative affect, and daily hassles. The spouses/partners received a shortened version of the daily questionnaire that included measures of their spouses/ partners' experiences with unexpected work intrusions and unplanned role switching behavior.

As part of the daily questionnaire, I first verified whether the spouses/partners were present with the focal participants each day. I asked both focal employees and their spouses/partners to estimate the number of nonwork waking hours they spent together each day. These questions helped ensure that the spouse/partners were able to provide accurate estimates of the focal employees' work intrusions and unplanned role switching experiences.

The daily questionnaire (for both the focal participant and spouse/partner) also included important definitions that the participants could refer to when responding to the daily work intrusion and unplanned role switching items. "Nonwork Hours" was defined as the part of the day that is beyond one's normal work schedule or typical work hours; i.e., personal time. This includes the hours before or after work on a work day, or anytime on a nonwork day. "Nonwork Location" was defined as a location other than one's traditional work location (i.e., office), e.g., home, car, a store or restaurant, someone else's home, the gym, outdoors, etc. "Unexpected Work Intrusion" was defined as a work task/activity that unexpectedly interrupts one's personal time, such as an unexpected phone call from a co-worker or an unexpected e-mail from one's boss. Participants were instructed to not include planned work tasks/activities during their personal time, such as bringing work home with them or a scheduled late-night meeting. For "Types of Work Intrusions," participants were instructed to include only unexpected intrusions that were initiated by someone other than themselves (e.g., phone call or email from your boss) during their personal time. Based on this definition, work-related thoughts or concerns did not count as unexpected work intrusions.

If a participant reported only one intrusion on a particular day, s/he responded to only one set of questions about the intrusion and unplanned role switching episode. Participants who reported two intrusions on a particular day were presented with two sets of the intrusion and role switching measurement items. They were asked to think about the first intrusion that occurred when responding to the first set of questions and then the second intrusion for the second set of questions. Participants who reported more than two intrusions in a day were asked to think about the two most memorable intrusions that day and then respond to the set of intrusion and role switching questions for each intrusion. They were asked to first think about the most memorable intrusion when responding to the first set of questions and then the second most memorable intrusion for the second set of questions. Thus, participants completed a series of questions for up to two work intrusions experienced each day (if any). Spouses/partners completed a shorter set of more general questions about the focal employees' experiences with work intrusions.

I calculated work intrusion frequency each day by asking participants if they experienced at least one unexpected work intrusion during their personal time while in any nonwork locations that day (1 = n*o*, 2 = y*es*). If they experienced at least one intrusion, then they were asked how many unexpected intrusions they experienced that day (1 = *1*, 2 = *2*, 3= *3*, 4 = *4*, 5 = *5 or more*). This data were aggregated to the person-level so that I could measure the total number of work intrusions experienced (i.e., work intrusion frequency) during the entire daily study period. This person-level aggregated variable was used when testing antecedents of the employee outcome variables.

Three days after the one-week daily study period ended, e-mails were sent to the focal participants with links to the post-questionnaire, which included the outcome

measures, except negative affect which was measured in the daily questionnaire. They were given one week to submit the final survey. Two e-mail reminders were sent to the participants – the first one was delivered three days after the final questionnaire was sent and the second one was delivered on the final day of the study period. The final question in the post-questionnaire asked participants to provide their names and home addresses so that they could receive their bonus incentives.

Measures overview. Several different types of constructs were measured in the present research: participant characteristics, antecedent variables, the focal constructs (work intrusions and unplanned nonwork-to-work role switching), outcome variables. The measures section is organized according to these different variables, starting with the participant characteristics. When I discuss the new measures for my focal constructs I also describe modified versions of these new measures that were administered to the focal participants' spouses/partners.

Unless otherwise noted, all variables were assessed with seven-point Likert response scales (1 = *strongly disagree* to 7 = *strongly agree*). Negatively worded items were reversed scored so that higher scale scores reflected greater amounts of the constructs. Reliability was measured as internal consistency, based on coefficient alphas, and reported for all final scales. A value of .70 was considered acceptable (Nunnally, 1976). For pre-established scales only, I referred to the "scales if item deleted" statistic to determine which items should be removed to increase the alpha to an acceptable level. The process for evaluating my new measurement scales is discussed prior to the measurement section that focuses explicitly on my new measures (see p. 146). See Appendix K for a complete list of items within each measurement scale.

Participant characteristics measures. Participants were asked to indicate their *marital status* (1 = *single/not married*, 2 = *separated*, 3 = *divorced*, 4 = *widowed*, 5 = *married/living as married*). The *spouse/partner's work status* was measured as well (1 = *homemaker/unemployed*, 2 = *part-time, i.e., less than 30 hours per week*, 3 = *full-time, i.e., at least 30 hours per week*). Participants also provided their *gender* (0 = *male*, 1 = *female*) and *parental status* (1 = *parent*, 0 = *non-parent*). If they were a parent, they were asked to indicate how many children they had living with them under the age of five. Lastly, participants also provided their organizational *tenure* (1 = *0 to 6 months*, 2 = *6 months to 1 year*, 3 = *1 to 3 years*, 4 = *3 to 5 years*, 5 = *5 to 10 years*, 6 = *more than 10 years*) and annual *salary* in dollars.

Job and organizational antecedent measures. I measured *work role overload* with Bolino and Turnley's (2005) three-item role overload scale ($\alpha = .93$), which was based on earlier role overload scales (Greenhaus, Allen, & Spector, 2006; Moreno-Jimenez et al., 2009). These items assessed feelings about workload and the amount of time to get work done each day. A sample item was, "I did not have enough time to get everything done at work today." These scores were aggregated across the seven days to create a composite score that represented the extent of each participant's work role overload for the daily study period.

I used a modified version of Kossek et al.'s (2006) measure of perceived job control to assess perceptions of *job flexibility*, which is defined as the personal freedom to control where and when a job is performed. Kossek et al.'s scale consisted of three job autonomy items focused on how one does one's job, based on the Job Diagnostic Survey (JDS; Hackman & Oldham, 1976) and four items that focused on newer forms of job

flexibility – personal flexibility control over work location and scheduling (i.e., place and time autonomy, respectively). As Kossek et al.'s measure was new, they conducted exploratory factor analysis and the results strongly supported a single factor solution for control over how one does one's job, place of work, and scheduling of work ($\alpha = .74$). The three items measuring control over how an individual does his/her job were excluded from my measure since my focus was on the newer forms flexibility that are related to role transitioning. Since unplanned role switching is mainly concerned with the location and timing of work rather than how an individual does his/her job, my job flexibility measure included only four items from Kossek's et al.'s scale – two items focused on control over place of work and two items focused on scheduling of work. Sample items were, "To what extent does your job permit you to decide on your own about WHERE the work is done?" (1 = *not at all* to 7 = *very much*) and "To what extent does your job permit you to decide about WHEN the work is done? (1 = *not at all* to 7 = *very much*). The alpha coefficient for my modified scale was .80. Appendix K shows the items that were retained and excluded from Kossek et al.'s scale.

To measure *perceived job insecurity*, I used Mauno, Leskinen and Kinnunen's (2005) four-item global measure of job insecurity. This scale is based on Johnson, Messe, and Crano's (1989) global measure, which focuses on the threat of job loss or job discontinuity (Greenhalgh & Rosenblatt, 1984). Sample items were, "I am worried about the possibility of being fired" and "I am certain that my job will continue for a long time" (reverse-coded; $\alpha = .93$).

My measure of *organizational time demands* was not included in the data collection due to a technical issue with my survey program. The items I planned to use

were adopted and modified from Thompson et al.'s (1999) 20-item organizational Work-Family Culture scale.

Individual antecedent measures. An eight-item reduced version of Kanungo's (1982) job involvement scale was used to measure *work identification* (i.e., the extent to which someone identifies with the work role). A study by Blau (1985) suggested that Kanungo's scale is uni-dimensional and a purer measure of psychological identification than Lodahl and Kejner's (1965) short-form measure. Previous studies that have employed reduced versions of Kanungo's scale showed that the reduced scale had sufficient reliability, ranging from .72 to .88 (e.g., Boswell & Olson-Buchanan, 2007; & Olson-Buchanan & Boswell, 2006; Frone et al., 1992; Hecht & Allen, 2009). Several researchers (Boswell & Olson-Buchanan, 2007; Olson-Buchanan & Boswell, 2006; Hecht & Allen, 2009) have used Kanungo's job involvement scale to assess work role identification as it measures psychological identification with a job, e.g., "I like to be absorbed in my job most of the time" and "I am very much involved personally in my job" ($\alpha = .82$).

To measure the extent to which someone identified with their various nonwork roles, I used a modified version of Yogev's (1985) eight-item family involvement instrument, which was modeled after Lodahl and Kejner's (1965) job involvement scale, and has been used in prior work-family research (Frone & Rice, 1987; Frone, Russell, & Cooper, 1992a; Parasuraman, Greenhaus, & Granrose, 1992). However, previous studies have examined only family roles (e.g., spouse and parent), so I modified some of the items used in prior research so that they captured identification with both family roles and personal life roles, which has been done by others (e.g., Olson-Buchanan & Boswell,

2006; α = .80). When I tested my antecedent measurement models using CFA, results confirmed that family role identification and personal role identification loaded onto two separate factors. Refer to the Study 3 Results sections for my measurement models for more details. Sample items are: "I would be a less fulfilled person without my role(s) in my family life" and "I enjoy talking about my personal life with other people." The coefficient alphas were .91 for the *family role identification* scale and .85 for the *personal role identification* scale.

To assess *integration boundary management strategy*, I assessed the degree to which participants preferred to integrate or segment their work and nonwork roles using a reduced version of the nine-item Kossek et al. (2006) boundary management strategy scale. My measure consisted of four items that are relevant to unplanned nonwork-to-work role switching. Prior to answering these questions, participants were prompted with the following: "With the increasing demands of work and personal life, employees may work in different ways to handle these demands. A sample item was: "I actively strive to keep my personal and work-life separate." Although the coefficient alpha of .54 was considerably below the recommended cut-off, it was not improved by removing items. Thus, because this is a pre-established measure, all four items were retained (see Appendix K for the four items).

I assessed individuals' level of *conscientiousness* in the initial questionnaire using ten items from the International Personality Item Pool (http://ipip.ori.org; "International Personality Item Pool: A Scientific Collaboratory for the Development of Advanced Measures of Personality and Other Individual Differences," 2002; e.g., I am a very methodical person; α = .79).

Mindfulness was assessed with Brown and Ryan's (2003) 12-item measurement scale. Brown and Ryan performed CFA and reported a satisfactory fit with a single factor model. Brown and Ryan defined mindfulness as the state of being attentive to and aware of what is going on in the present moment. Sample items were: "I do jobs or tasks automatically, without being aware of what I'm doing" and "I find myself preoccupied with the future or the past" ($\alpha = .88$). All items were reverse scored. Although the construct of mindfulness has been mainly assessed in clinical settings, this measurement scale has been used in a recent work-life study (Grotto & Hyland, 2009).

I measured *organization-based self-esteem* by assessing perceptions of the degree of value one feels through associating with his/her organization with eight items adapted from Pierce et al. (1989). A sample item was: "I am valuable in my workplace" ($\alpha = .94$). This measurement scale has been successfully used in recent studies (e.g., Lee & Peccei, 2007).

Context measures. As part of the daily questionnaire, there were several questions that assessed the context for each day and for each work intrusion. I first asked participants what *type of day* it was (1=*regular work day*, 2=*regularly scheduled day off*, 3=*special paid day off (e.g., for vacation)*, 4=*a personal/sick day*). Since there were very few responses for "special paid day off," this variable was recoded with only two response options (1= *work day*, 2 = *nonwork day*).

I included five open-ended questions about *work hours* each day: (1.) "How many total hours (scheduled and unscheduled hours) did you work today?" (2.) "How many of your total work hours today were part of your regular work schedule (i.e., part of your regular weekly work schedule)?" (3.) "How many regular hours did you work while

outside of your primary work location (e.g. at home) today?" (4.) "How many of your total work hours today were unscheduled (i.e., not part of your regular weekly work schedule)?" and (5.) "How many unscheduled hours did you work while outside of your primary work location (e.g. at home) today?" The first question about total work hours was used in all analyses as a measure of total work hours for the daily study period, and the remaining four questions were used to check for any unusual work weeks for participants.

Participants responded to several contextual questions for each intrusion. Dichotomous contextual variables were created based on what were considered the most important aspects according to the qualitative results from Study 1. The timing of each work intrusion was recorded by asking an open-ended question: "When did the unexpected work intrusion occur? Provide the time of day." These responses were coded into five categories: 1 = *early morning*, 2 = *morning*, 3 = *afternoon*, 4 = *early evening*, 5 = *evening*. Given that early morning and evening intrusions seemed to be the most problematic based on the interviews, I recoded the responses to the timing question to create two dichotomous variables: *early morning intrusion* (0 = *no,* 1 = *yes*) and *evening intrusion* (0 = *no,* 1 = *yes*).

I asked participants who was present at the time of intrusion (1=*no one, i.e., you were alone,* 2=*my significant other, e.g., spouse, partner, boyfriend, girlfriend*, 3=*my child(ren),* 4=*other family member(s), e.g., parents, siblings,* 5=*friends,* 6 = *other*). Due to low frequencies for some response categories (e.g., other family member), a few response options were recoded into "other" (1=*no one, i.e., you were alone*, 2=*my significant other,* 3=*my child(ren),* 4=*other*). Based on my qualitative results from Study

1, I expected intrusions to be more problematic when the participant was with someone else at the time rather than alone, so a new variable, *someone present*, was created (0 = *no*, 1 = *yes*).

Participants indicated their nonwork location at the time of each intrusion (1=*home*, 2=*other's home*, 3=*car or other form of transportation*, 4=*store or restaurant*, 5=*outdoors*, 6=*other nonwork location*). Some response options (e.g., other's home) were collapsed into "other" due to low frequencies (1=*home*, 2= *car or other form of transportation*, 3=*other nonwork location*). Intrusions occurring while at home were expected to be the most intrusive based on Study 1 results, so I created a new variable called *home location* (0 = *no*, 1 = *yes*).

Participants' *nonwork activity* at the time of the intrusion was measured as well (1=*leisure activity, e.g., relaxing, reading, eating, watching TV, using computer for personal reasons*, 2=*attending a social or family event*, 3=*nonwork task or domestic responsibility, e.g., cleaning, cooking, errands, home maintenance*, 4=*child care*, 5 = *elder care*, 6=*cannot remember*, 7=*other*). Some response options (e.g., elder care) were recoded as "other" because of low frequencies, and some "other" responses were recoded into a new category that captured the fairly common activity of transitioning from one location to another, e.g., driving home from work (1=*leisure activity*, 2=*nonwork task or domestic responsibility*, 3=*driving, leaving work, going to work*, 4=*other*). An intrusion occurring while engaged in a leisure activity seemed to be the most problematic, so I created a *leisure activity* variable (0 = *no*, 1 = *yes*). Intrusions that occurred when the individual just recently made a transition from a work to a nonwork location were also

expected to be problematic (e.g., just arrived home), so I created a *transitioning activity* variable (0 = *no,* 1 = *yes*).

Participants were asked to indicate the *source of the intrusion* (1=*co-worker/colleague*, 2=*subordinate*, 3=*boss/manager/supervisor*, 4=*client/customer*, 5=*other*). One response category had a low frequency (i.e., subordinate) and was recoded into "other" (1=*co-worker/colleague,* 2= *boss/manager/supervisor*, 3=*client/customer*, 4=*other*). Since a boss seemed to give employees the most pressure to respond, according to Study 1 results, I created a *boss as the source* variable (0 = *no,* 1 = *yes*).

Participants indicated the type of intrusion as well (1=*phone call/missed call*, 2=*voicemail notification*, 3=*text message*, 4=*email notification*, 5=*other*). Because of low frequencies, voicemail notification was combined with phone call/missed call (1=*phone call/missed call/voicemail notification*, 2=*text message*, 3=*email notification*, 4=*other*). Phone calls/missed call/voicemail notification were expected to be the most intrusive based on Study 1 results, so I created a *telephone intrusion* variable (0 = *no,* 1 = *yes*).

Participants also indicated the nature of the intrusion (1=*question/request for information*, 2=*request for help*, 3=*demand*, 4=*complaint*, 5=*information/update for you*, 6=*emergency*, 7=*work error*, 8=*other*). Emergencies, complaints, demands, and errors were recoded into one category because of their conceptual similarity and low frequencies (1=*question/request for information*, 2=*request for help*, 3=*complaint, demand, emergency*, or *error*, 4=*information/update for you*, 5=*other*). Categories one and two were expected to be the most important types of intrusions based on Study 1 results, so I created two new variables: *request for help* (0 = *no,* 1 = *yes*) and *emergency intrusion* (0 = *no,* 1 = *yes*).

Overview of measurement development for new measures. For all new measures, I present the results of the exploratory factor analysis (EFA) and then present the results of the confirmatory factor analysis (CFA). I conducted EFA first to determine the factor loadings. The method for extraction and rotation of factors was maximum likelihood. I applied an oblique direct oblimin rotation as the factors were expected to be correlated, and deltas were set to 0. I used multiple criteria to determine which factors to retain for the final scales (Ford, MacCallum, & Tait, 1986; Kim & Mueller, 1978). First, I used Kaiser's eigenvalue-greater-than-one criterion. Second, I retained a factor if the unique variance explained was greater than 60%. Additionally, the number of factors to retain was determined from the relationship of the correlations between pairs of items to the loadings of these items on the factors. Items with pattern coefficients that loaded at .4 or higher on the intended factor and less than .3 on any other factor were retained (Kim & Mueller, 1978).

I conducted CFA with LISREL to determine whether the number of factors and loadings for the work intrusion and unplanned role switching items conformed to the constructs derived from my qualitative analysis, the EFA results, and prior theory (Kim & Mueller, 1978). CFA was appropriate to use at this stage since I first conducted EFA on my new scales and hypothesized beforehand the number of factors in my model and the expected patterns of loadings. Since the chi-square difference statistics are sensitive to sample size, I also referred to three other goodness-of-fit (GOF) tests recommended by Kline (2006) to determine whether the tested models should be accepted or rejected (i.e., CFI, RMSEA, and SRMR). For all models, I used the recommended thresholds of .90 for CFI, .06 for RMSEA, and .08 for SRMR (Hu & Bentler, 1998, 1999).

Work intrusion characteristics measures. Based on the results of Study 1 and Study 2, the refined measurement items for work intrusions were used in Study 3 (see Appendix K). For 18 Likert-scale work intrusion items, EFA pattern and structure matrix coefficients were examined to determine the number of factors (see Table 7). The eigenvalue greater-than-one criterion indicated that five factors existed among the 18 items, which together explained more than 60% variance. I retained four factors with pattern coefficients greater than .4, for a total of 12 retained items. The following six items were not retained: "Felt pressure to respond from someone external to your company," "Felt pressure to respond from someone internal to your company besides the person causing the intrusion," "A response on your part was needed by others," "A response on your part was part of your job responsibilities," "A response on your part was expected by the person causing the intrusion," and "Intrusion was...Foreseeable." Additionally, an item asking about the urgency of the work intrusion was not retained, as it had a structure coefficient of .4 or higher on three different factors. So a total of 11 items were retained, forming four work intrusion factors. These four factors were named based on the conceptual meanings of the items within each factor: intrusion significance, intrusion pressure, intrusion demands, and intrusion predictability.

The three items measuring the intrusion significance factor were used to create an episode-level *work intrusion significance* scale. The three items assessed the extent to which an intrusion was: (1.) necessary, (2.) important, or (3.) something only the participant could address (1=*not at all* to 7=*very much*). The reliability coefficient alpha for this scale was .91.

The items in the intrusion pressure and intrusion demand factors were conceptually very similar. The intrusion pressure factor assessed the extent to which participants felt pressure to respond to intrusions from the person causing the intrusion or from themselves (1=*not at all* to 7=*very much*). The intrusion demand factor assessed the extent to which there was a demand or expectation (by the person causing the intrusion or someone else) to respond to an intrusion (1=*not at all* to 7=*very much*). Given the large conceptual overlap in these two factors, I tested a CFA model to determine whether these two factors comprised a multidimensional measure (see Table 8). The two-factor model fit the data fairly well according to the GOF statistics, CFI =.99, SRMR = .10, and RMSEA = .04. Based on a chi-square difference test between the two models, the two-factor model (i.e., Model 1) had a considerably better fit than a one-factor model (i.e., Model 2; $\chi^2_{diff} = 21.39$, $df = 1$, $p < .001$) which combined intrusion pressure and intrusion demands into one factor, suggesting that there were two separate dimensions. The final five-item multidimensional scale was named *work intrusion pressure* ($\alpha = .86$).

I used CFA to test whether work intrusion significance and my multidimensional work intrusion pressure scale were separate variables (see Table 9). A three-factor model fit the data fairly well. The CFI (.99) was above the recommended threshold. Although the SRMR value of .10 was above the recommended cut-off, the RMSEA value of .04 was acceptable and the confidence interval ranged from .00 to .16. Furthermore, the three-factor model (i.e., Model 1) had a considerably better fit than a one-factor model (i.e., Model 2) that combined all three aspects of work intrusions, based on a chi-square difference test between the two models ($\chi^2_{diff} = 221.38$, $df = 3$, $p < .001$). Together, the EFA and CFA results demonstrated that these eight work intrusion measurement items

were comprised of three factors – a two-dimensional five-item work intrusion pressure scale and a three-item work intrusion significance scale.

The final three items comprised the work intrusion predictability factor, which assessed the extent to which an intrusion was the following, taking into consideration who caused the intrusion: (1.) unusual, (2.) common, or (3.) surprising (1=*not at all* to 7=*very much*). However, the reliability coefficient for this scale was only .61. In the present study, all work intrusions were considered to be unexpected by definition. Furthermore, since this variable had the lowest variance in ratings compared to all other measures, I did not deem it as an important dimension to measure, and therefore it was excluded from my main analyses. See Table 10 for the final three work intrusion measurement scales.

Unplanned nonwork-to-work role switching measures. Based on the results of Study 1 and Study 2, the refined measurement items for unplanned role switching were used in Study 3 (see Appendix K). First, following the report of each work intrusion, participants were asked to indicate whether they reacted to the intrusion in any way (0 = *no*, 1 = *yes*), which served as a measure of the *unplanned nonwork-to-work role switching response*, a dichotomous episodic variable. Participants were reminded that even thinking about work, listening to a voicemail, or reading an e-mail or text was considered a reaction. Responses to this question were aggregated to the person-level by summing the responses across all days to create a person-level aggregated measure of *unplanned nonwork-to-work role switching frequency*. This variable indicated the total

number of times during the daily study period participants engaged in unplanned nonwork-to-work role switching and was tested as an antecedent of the person-level employee outcomes.

If participants reacted in any way to at least one intrusion, they were also presented with a series of unplanned nonwork-to-work role switching items corresponding to each intrusion. I first conducted EFA to determine the number of factors among these 17 items (see Table 11). I excluded a one-item measure of the physical effort required to switch roles since my qualitative analysis results from Study 1 indicated that this type of effort was distinct from mental effort. This one-item measure is described further below. I also excluded an item that asked whether individuals responded in some other way to intrusions other than the response options provided (e.g., read/replied to email, text, or phone call) due to a low frequency of responses.

The eigenvalue greater-than-one criterion indicated that there were five factors underlying the 17 unplanned role switching items, explaining almost 60% variance (see Table 11). These five factors all had items with pattern coefficients greater than .4. Twelve items had pattern coefficients of .4 or higher on a single factor and less than .3 on any other factor. The following five items were not retained: "How did you respond to the intrusion: Thought about it?" "How did you respond to the intrusion: Answered a phone call?" "How did you respond to the intrusion: Made a phone call?" "How did you respond to the intrusion: Did other work tasks not involving emails or phone calls?" and "To what extent did your response require mental effort?" I also did not retain the following item: "How did you respond to the intrusion: Listened to a voicemail?" This

item had a pattern coefficient loading of .500 on one of the factors, but it conceptually did not fit with the factor on which it loaded.

The five factors are discussed next. I named these five factors based on the conceptual meaning of the items within each factor, and they are as follows: smartphone response, computer response, response mental disruption, response mental effort, and automatic response.

Two of the factors included items that measured the type of technology that participants used to respond to intrusions: smartphone response and computer response. The smartphone response factor was comprised of two items that asked participants whether they responded to intrusions by reading or replying to an email/text message on their smartphones (1 = *no,* 2 = *yes*). The computer response factor included two items that asked whether they responded by reading or replying to emails by logging onto computers/tablets (e.g., iPads; 1 = *no,* 2 = *yes*).

Five items loaded onto two other factors: response mental disruption and response mental effort. The items in these twos factor were very conceptually similar in that they both measured the mental processes underlying a role switching response. The three items in the mental disruption factor assessed the degree to which an unplanned role switch was: (1.) bothersome, (2.) disruptive, and (3.) mentally distracting (1=*not at all* to 7=*very much*). The two items in the mental effort factor assessed the extent to which a response to the intrusion was (1.) easy and (2.) challenging (1=*not at all* to 7=*very much*). Given the great degree of conceptual overlap in these items, I tested a two-factor model using CFA to determine whether these two factors comprised a multidimensional measure of unplanned role switching mental difficulty (see Table 12). The two-factor

model fit the data fairly well. The CFI (.99) was above the recommended threshold. The RMSEA value was acceptable at .08 and the confidence interval ranged from .00 to .24. The SRMR value of .04 was below the recommended cut-off. According to chi-square results, this two-factor model (i.e., Model 1) had a considerably better fit than a one-factor model (i.e., Model 2; $\chi^2_{diff} = 19.01$, $df = 1$, $p < .01$) that combined the two factors, thereby demonstrating that there were two underlying latent dimensions of unplanned ole switching mental difficulty. These two factors were used to create a multidimensional measure of *unplanned nonwork-to-work role switching mental difficulty* ($\alpha = .88$). This measure corresponds to Ashforth et al.'s (2000) notion of role transitioning difficulty, which is the required mental effort to disengage from one to engage in another.

The automatic response factor included items that measured the extent to which a response to an intrusion was: (1.) immediate (i.e., instant; you did not hesitate) and (2.) automatic (i.e., you didn't even have to think about it; 1=*not at all* to 7=*very much*). The reliability coefficient alpha for this scale was only .51, and removing items did not significantly increase the alpha. Since this was not a pre-established measure, this factor was excluded from my main analyses. See Table 13 for these final three unplanned nonwork-to-work role switching scales.

A one-item measure of *unplanned nonwork-to-work role switching physical effort* assessed the extent to which a response to an intrusion required physical effort (1=*not at all* to 7=*very much*). This item was significantly correlated with the dimensions of mental effort and mental interference ($r = .36$, $p < .001$; $r = .26$, $p < .05$, respectively) at the episode-level. However, this item was not considered to be part of the unplanned role switching mental difficulty scale, as the qualitative analysis revealed that physical effort

involved a physical underlying process that was separate from the psychological process of switching roles.

Unplanned nonwork-to-work role switching response length was assessed with an open-ended item that asked participants to estimate how much personal (i.e., nonwork) time they spent responding to each intrusion, in minutes and hours. They were reminded to include any follow-up work that was done later in the day during their personal time. Hours were converted into minutes, such that the final scale reflected the total number of minutes spent responding to an intrusion. See Table 13 for all final unplanned nonwork-to-work role switching scales.

Outcome measures. I used Carlson et al.'s (2000) nine-item work-to-family conflict scale to measure *work-to-nonwork interference* (i.e., WHI). Carlson et al.'s measure has been used extensively in the work-life literature; however, I modified some items so that other nonwork roles besides family roles were included. Carlson et al.'s work-to-family conflict scale measures three types of conflict: time-based ("My work keeps me from my family/personal activities more than I would like;" $\alpha = .86$), strain-based ("Due to all the pressures at work, sometimes when I come home I am too stressed to do the things I enjoy;" $\alpha = .93$), and behavior-based ("Behavior that is effective and necessary for me at work would be counterproductive outside of work;" $\alpha = .87$). The alpha coefficient for the full scale was .90.

Burnout was measured with the 16-item Oldenburg Burnout Inventory (OLBI; Demerouti, Bakker, Vardakou, & Kantas, 2003), which can be employed with a variety of occupations. Construct validity evidence has been provided for the English translated version (Halbesleben & Demerouti, 2005). The OLBI was designed to assess cognitive

and physical components of burnout, as has been suggested by several researchers (Pines et al., 1981; Shinn, 1982) to capture the nature of burnout that is experienced as a result of stress from the work role. The alpha coefficients for the OLBI range from .74 to .87.

Eight items measured exhaustion, which refers to overtaxing from work, a strong need for rest, and a state of physical exhaustion (e.g., "After my work, I regularly feel worn out and weary"). Eight items measured disengagement which is the extent to which one distances him/herself from work as well as cynical attitudes and behaviors towards work (e.g., "I frequently talk about my work in a negative way"). My coefficient alpha was .90.

Participants' *poor physical health symptoms* were assessed using a measure of health complaints (Geurts, Kompier, Roxburgh, & Houtman, 2003). Geurts et al.'s measure was based on a 13-item subjective health questionnaire that has been extensively validated in Dutch samples (α's average to .80; Dirken, 1969; van Steenbergen & Ellemers, 2009). The original scale consisted of dichotomous items (0 = *no* and 1 = *yes*) that asked respondents whether or not they occasionally suffered from a range of health complaints, adding up to a total between 0 and 13. I used Geurts et al.'s converted five-point scale version and assessed how often in the past week one has suffered from 13 health complaints (1 = *never* to 7 = *very often*; α's range from .69 to .79). Sample health complaints included pain in the chest or heart area, short of breath, headache, an upset stomach, dizziness, fatigue, and backache (α = .93).

Participants' *negative affect* prior to and following each unplanned role switching episode were assessed as part of the daily questionnaire using items from the PANAS (Watson, Clark, & Tellegen, 1988). They were asked at the end of each day to indicate

the extent to which they felt distressed, upset, irritable, nervous, jittery, or afraid before and after each unplanned role switching episode (1=*not at all* to 7=v*ery much*). The reliability coefficient alpha was .91.

Measures to test for discriminant validity. Discriminant validity is established when a measure is shown to measure something different from similar existing measures (Nunnally & Berstein, 1994). I included two measures in Study 3 to help distinguish my new unplanned role switching measures from variables that are conceptually similar. First, Hecht and Allen's (2009) measure of *boundary strength at home* (α = .90) was expected to be distinct from my measures of unplanned nonwork-to-work role switching. Hecht and Allen's measure did not specify whether work tasks/activities performed at home were planned or unplanned, and they did not measure how individuals responded to the work correspondences at home or the difficulty of responding. Sample items included: "I often do work at home," "I never take my work out of the office," and "I receive work-related correspondence at home." My coefficient alpha was .89.

I also tested how my measures of unplanned nonwork-to-work role switching were different from Clark's (2002) seven-item measure of *nonwork permeability* (α = .80). Clark's unidimensional measure was similar to some aspects of unplanned nonwork-to-work role switching, as it assessed whether individuals were interrupted by work at home (e.g., "I receive work-related calls while I am at home"), whether they switch to work tasks while at home (e.g., "I stop in the middle of my home activities to address a work concern."), as well as whether they thought about work while at home (e.g. "I think about work-related concerns while I am at home."). However, although Clark's research addressed how individuals enact their work and nonwork roles to create

balance, her focus was on the role of communication at home. Specifically, she was interested in how individuals communicate about work with their family and friends. Thus, the role switching measure was not comprehensive. Only one item asked respondents how often they thought about work-related concerns while at home and only one item assessed switching between roles. Furthermore, the measure was cross-sectional, requiring respondents to recall experiences over the past month. Lastly, the only role switching dimension assessed was frequency, while difficulty of role switching was neglected. I expected that this measure would not cover the content domain of unplanned nonwork-to-work role switching and would also not provide accurate estimates of how often someone switches roles in response to various work intrusions. My coefficient alpha was .92. The results for the CFAs used to test for discriminant validity are presented in the results section.

Common method variance and contamination. Common method variance (CMV; Siemsen, 2006) is systematic error variance shared among variables measured with the same method and/or source (Richardson, Simmering, & Sturman, 2009), which may inflate relationships. In an effort to address CMV, I collected unplanned role switching data on a daily basis from multiple sources (i.e., employee and employee's spouse/partner) and included some other variables (e.g., length of role switching episode) to help make my assessments of these variables concrete and factual (Spector, 2003). It is also possible that certain pairs of variables are related because of contamination, which occurs when a third variable influences the observed relationship between two other variables, such that it affects the measures of the constructs rather than the underlying constructs (Spector & Brannick, 2011). To help address contamination I controlled for

employees' levels of neuroticism and daily hassles experienced during the daily study period, which were described in the literature review.

I measured *neuroticism* in the first questionnaire, using ten items from the International Personality Item Pool (http://ipip.ori.org; 2002). A sample item is: "I have frequent mood swings" ($\alpha = .86$). As part of the daily questionnaire, I assessed experienced *daily hassles* with an inventory that has been successfully used by other work-life researchers (Grzywacz, Almeida, & McDonald, 2002). The inventory consists of seven questions that ask if certain events have occurred within the past 24 hours (1 = *yes*, 2 = *no*). Samples of these negative events included having an argument or disagreement with someone, a stressful event at work, or a stressful event at home in the past 24 hours. If the event occurred, respondents also rated the severity of the event using a four-point scale (1 = *not at all stressful* to 7 = *very stressful*). The final score reflected both the number of reported negative events and the severity of events across all days. Although combining the number of ratings and severity can lead to a loss of information, Grzywacz et al. found a very high correlation between the number of events and severity ($r = .94$), indicating little loss of information. These scores were aggregated over the seven days to create a composite score that indicated the number and severity of hassles experienced during the study period for each participant ($\alpha = .77$).

Study 3 analyses

The analysis plan for Study 3 involved two phases. First, I assessed the psychometric properties of my new work intrusion and unplanned nonwork-to-work role switching scales using confirmatory factor analysis (CFA). In the second phase I took initial steps to testing a nomological net of variables and also tested my hypotheses. I

used hierarchical linear modeling and hierarchical multiple regression to examine the relationships of unplanned nonwork-to-work role switching with various person-level and episode-level antecedents and person-level outcomes. The analysis steps for phase one will be discussed first, followed by the analysis steps for phase two.

Measurement models. I conducted CFA with LISREL to test for discriminant validity for my new work intrusions and unplanned role switching scales (Bagozzi & Phillips, 1991), as it was essential to demonstrate that my measures captured psychological processes that are distinct from role transitioning concepts from prior research. I also conducted CFA to examine various parts of my measurement model (Bagozzi & Phillips, 1991). I tested several measurement models to ensure that my proposed antecedents were distinct from each other and that my proposed outcomes were distinct from each other.

Hypotheses testing and exploratory analyses. The last phase of analysis was to test variables in the proposed nomological net surrounding unplanned nonwork-to-work role switching. I also explored whether various contextual variables and work intrusion characteristics were antecedents of unplanned nonwork-to-work role switching. My study had a cross-level design, with repeated measures at the episode-level and measurements at the person-level. For repeated measurements, it cannot be assumed that level-1 relationships are independent from one another. Thus, I conducted hierarchical linear modeling (HLM) analyses using HLM version 7 software (Barnett, Raudenbush, Brennan, Pleck, & Marshall, 1995) to test most of the cross-level research questions and hypotheses with continuous level-1 outcome variables. HLM is appropriate for repeated measures as it accounts for the possibility of error terms or sources of variability at level-

1 and level-2 (LeBreton & Senter, 2008). HLM also partitions the variance in level-1 variables into within-person and between-person sources.

The level-1 models were based on episodic data about specific intrusions, and were nested within persons. Level-1 data included intrusion contextual variables (e.g., intrusion timing), intrusion characteristics (e.g., source of intrusion, intrusion pressure), and unplanned nonwork-to-work role switching variables. The level-1 outcomes included unplanned nonwork-to-work role switching response, mental difficulty, and physical effort. The unplanned nonwork-to-work role switching response variable was binary (0 = *no*, 1 = *yes*). Hierarchical generalized linear model (HGLM) was the appropriate analysis for this multilevel data with nonlinear outcomes and non-normally distributed error terms (Raudenbush and Bryk 2002).

The mixed-effects model includes fixed effects and random effects. In the present study, my level-1 and level-2 antecedents were treated as fixed effects. Random effects were thought of as additional error terms or sources of variability at level-1 and level-2. Intra-individual variability was modeled at level-1, and inter-individual variability was modeled at level-2. A different level-1 model was estimated for each level-2 unit (i.e., person). Some level-1 variables (e.g., intrusion pressure) were tested for potential effects on reports of unplanned role switching responses, mental difficulty and physical effort. I allowed intercepts and slopes to vary across persons (level-2 units).

In the level-1 equations for my dichotomous outcome of unplanned role switching response, Y_{ij} has a binomial distribution and uses a logit link. The level-1 structural model for estimating within person relationships is:

$$\eta_{ij} = \beta_{0j} + \beta_{1j}(X_{1ij} - \bar{X}_{1.j}) + \ldots + \beta_{qj}(X_{qij} - \bar{X}_{q.j}) + r_{ij}$$

(1)

where η_{ij} is the log-odds that a work intrusion episode *i* for person *j* will be associated with an unplanned role switching response (β).

For the HLM analyses, the level-1 equation is (Smillie, Yeo, Furnham, & Jackson, 2006):

$$Y_{ij} = \beta_{0j} + \beta_{1j} X_{ij} + r_{1j}$$

(2)

where Y_{ij} is the log-odds that a work intrusion episode *i* for person *j* will be associated with an unplanned role switching response (β). For example, with work role overload as an antecedent and unplanned role switching response as the outcome, the level-1 equation indicates that each person in the study may have a different likelihood of responding to an intrusion (β_{0j}), and for each person, work role overload may have a different effect on the likelihood of responding (β_{1j}).

For the HLM analyses, the equations for level-2 variables are (Smillie et al., 2006):

$$\beta_{0j} = \gamma_{00} + \gamma_{01} W_j + u_{0j}$$

(3)

$$\beta_{1j} = \gamma_{10} + \gamma_{11} W_j + u_{1j}$$

(4)

β_{0j} is the level-1 intercept in level-2 unit (i.e., person) *j*; γ_{00} is the mean value of the level-1 dependent variable (e.g., unplanned role switching response), controlling for the level-2 antecedent, W_j (e.g., work role overload); γ_{01} is the effect, or slope, of the

level-2 predictor, W_j (e.g., work role overload); and u_{0j} is the error, or unmodeled variability, for unit (i.e., person) *j*. The second level-2 equation models the level-2 (i.e., person) effects on the slope of X_{ij}. Thus, β_{1j} is the level-1 slope in the level-2 unit (i.e., person) *j*; γ_{10} is the mean value of the level-1 role switching response slope, controlling for the level-2 antecedent, W_j (e.g., work role overload); γ_{11} is the effect of the level-2 predictor, W_j (e.g., work role overload); and u_{1j} is the error for unit (i.e., person) *j*. In other words, each level-1 parameter, such as unplanned role switching response, is a function of the level-2 antecedent (e.g., work role overload; γ_{01}) and variability (u_{0j}). So when testing work role overload as an antecedent, the level-2 equation would show whether the unplanned role switching response was a function of work role overload and error.

For all cross-level models, I centered episode-level antecedents around the respective person (i.e., group) mean and person-level antecedents around the grand mean. Centering episode-level variables around the person mean was necessary to analyze episode-specific effects within persons (Hofmann & Gavin, 1998). Centering implies that all between-persons variance in these variables is removed, and therefore allows me to rule out stable differences between persons as the reason for any significant findings.

For cross-level models, I first examined the null (i.e., unconditional) models with the level-1 outcome and no predictors to partition the variance into within-person and between-person components. The null models would also allow me to find the group (i.e., person) means of the level-1 variables. Based on the null model results, I interpreted non-significant random effects as evidence of invariant level-1 relationships (i.e., no significant unexplained variation) between individuals (Peeters, de Jonge, Janssen, & van

der Linden, 2004). HLM does not provide a significance test for the within-person variance component, so I conducted ANOVAs to partition the total variance into within- and between-persons variance to show whether some portion of the variance in the level-1 variables could be attributed to within-person variation. I expected there to be variation within persons. For instance, the mental difficulty of unplanned nonwork-to-work role switching was expected to vary for an individual during the daily study period.

To test my hypotheses, I examined intercepts-as-outcomes models to examine the fixed effects of the level-2 antecedents on the level-1 unplanned role switching outcome variables. To test the hypotheses related to my level-2 outcome variables, I needed to use hierarchical multiple regression since level-2 (i.e., person-level) variables cannot be tested as outcomes using HLM. I aggregated the level-1 intrusion and role switching data to create person-level predictors for the outcomes of WHI, burnout, health symptoms, and affect. For example, for each participant I aggregated the number of intrusions and unplanned role switching responses across the daily study period to obtain the total number of times each participant experienced an intrusion and switched roles in response to intrusions.

Power. Power is the likelihood that an analysis will detect a significant true effect size of a certain magnitudes given a prescribed level of confidence and sample size. There were three major sample properties I considered when determining how much power I would have in my study. Since I analyzed multi-level data, I considered the number of level-2 units (i.e., persons), number of level-1 units (i.e., role switching episodes), and the intraclass correlation (ICC).

First, I determined the optimal level-1 and level-2 sample sizes that would produce the desired value for the standard error of a particular parameter (Lee & Ashforth, 1993). Raudenbush and colleagues (Raudenbush & Bryk, 2002; Raudenbush, Bryk, Cheong, & Congdon, 2004) recommended a 10-to-1 rule of thumb, such that there are 10 level-1 units for each level-2 unit (Barnett et al., 1995). Based on this guideline, the goal for the present study was to have ten unplanned role switching episodes for each person. However, the practical constraints of this study (i.e., the time required for participation and the cost to pay participants) prevented me from collecting an adequate number of episodes based on this rule of thumb. For my final sample, 68 participants reported at least one unexpected work intrusion during the study period, and 36 reported at least two intrusions. Among the 68 participants who reported at least one intrusion, 55 reported at least one unplanned nonwork-to-work role switching episode and 25 reported at least two unplanned role switching episodes. However, Scherbaum and Ferreter (2009) claimed that sample sizes much smaller than the typical recommended sizes can have satisfactory levels of statistical power when examining medium effects. Moreover, they found that increasing the level-2 sample size, persons in my case, had a greater impact on power compared to increasing the level-1 sample size.

When evaluating my sample size I also considered the ICC, as recommended by LeBreton and Senter (2008). ICC measures the proportion of variance in unplanned role switching that is accounted for by level-2 units (i.e., people; LeBreton & Senter, 2008; Luke, 2004). I needed to make sure I had enough between-person variation for my unplanned role switching variables. With my final sample of 55 participants who had at least one role switching experience, there was 31% between-person variance for role

switching response, 45% for role switch mental difficulty, and 72% for role switching physical effort, ICC(1) = .31, .45, .72, for role switching response, role switching mental difficulty ,and role switching physical effort respectively.

Given Raudenbush's guidelines and Scherbaum and Ferreter's (2009) findings for adequate level-1 and level-2 sample sizes, as well as the amount of between-person variance in my level-1 outcome variables, I concluded that I had low power for testing cross-level relationships. Indeed, using a power program designed for multi-level research (Raudenbush, 2011; Raudenbush & Liu, 2000), I determined that my power was .40, which is fairly low. Since my power for detecting cross-level effects was relatively low, I set the criterion for cross-level effects at the $p < .10$ level and for other effects at $p < .05$, which is consistent with some other multilevel research studies (e.g., Smillie et al. 2006; Yeo and Neal 2004). Based on the large number of variables in my models and the small final sample sizes for level-1, large effect sizes were not expected. However, based on Scherbaum and Ferreter (2009)'s recommendations, my sample size for level-2 units (i.e., persons) was sufficient to detect small effects.

Study 3 results

Measurement models overview. The CFA measurement model results were based on the final sample (N = 68), which excluded participants who did not meet my criteria, i.e., focal employees who did not spend adequate time with their spouses/partners during the daily study period or who had low role switching frequency agreement with their spouses/partners. As the chi-square or the chi-square difference statistics are sensitive to sample size, I referred to three other goodness-of-fit (GOF) tests recommended by Kline (2006) to determine whether the tested models should be accepted or rejected (i.e., CFI,

RMSEA, and SRMR). For all models, I used the recommended thresholds of .90 for the CFI, .06 for RMSEA, and .08 for SRMR (Hu & Bentler, 1998, 1999).

Measurement models testing for discriminant validity. When I tested for discriminant validity, the CFA results demonstrated that my measure of unplanned nonwork-to-work role mental difficulty captured psychological processes that were distinct from other conceptually-related role transitioning constructs from prior research (see Tables 14, 15, and 16). I tested three different three-factor models to determine whether integration boundary management strategy, home boundary strength, and nonwork permeability were empirically distinct from the two dimensions of unplanned nonwork-to-work role switching mental difficulty. In each case, the three-factor models had a fairly good fit to the data. Furthermore, according to the chi-square difference tests, each of the three-factor models had a better to the data than the alternative one-factor models combining the two mental difficulty dimensions with each of the role transitioning constructs. Therefore, the findings demonstrated that the newly developed measures of unplanned nonwork-to-work role switching difficulty were conceptually distinct from the constructs of integration boundary management strategy, home boundary strength, and nonwork permeability.

Antecedent measurement models. The CFA results (not shown) for examining the antecedent variable measurement models showed that my proposed antecedents were distinct from each other. I ran separate tests for job characteristics, individual difference variables related to work (e.g., work role identification) and individual difference variables related to personality (e.g., mindfulness). First, I tested the fit of three models (due to the large number of antecedents) and compared each of these models to a

plausible alternative model (not shown) which combined the characteristics into one factor. First, I tested a three-factor model based on the three job characteristics (job autonomy, work role overload, and job insecurity as three variables). This model had a good fit to the data. The CFI was .97, and the SRMR value was .06. Also, the RMSEA was .06 and the RMSEA confidence interval ranged from .00 to .09. This three-factor model had a much better fit than a one-factor model that grouped the three variables together into one latent job characteristic variable, as indicated by the chi-square results (χ^2_{diff} =534.56, $p < .001$). Results suggested that the scale items for the three job characteristics loaded onto three separate latent factors that were distinguishable from each other.

The second model I tested (not shown) was a three-factor model with the three individual difference variables related to work and nonwork roles (work and nonwork role identification and integration boundary management strategy as the latent variables). I tested a four-factor model, with work role identification, family role identification, personal life role identification, and integration boundary management strategy as the latent variables. The modification results suggested that GOF would be improved by allowing error terms to covary between several sets of items, which was theoretically justified for a few reasons. For example, individuals who prefer an integration boundary strategy are very likely to identify with both work and nonwork roles, as they tend to conceive of work and nonwork roles as having little or no distinctions in thought, time, or space (Ashforth et al., 2000; Rothbard, 2001; Rothbard & Edwards, 2003). After adding the error co-variances, the model had a fairly good fit to the data. The CFI was .95, and the RMSEA was .06 (confidence interval was .04 to .07). The SRMR value (.10) was not

below the recommended cut-off of .08. However, the results of the chi-square difference test indicated that this four-factor model had a substantially better fit to the data than a two-factor model that grouped work and nonwork role identification together into one latent variable and kept integration boundary management as a separate latent variable (χ^2_{diff} =775.14, $p < .001$). These findings demonstrated that the role identification items and the integration boundary strategy items loaded onto distinguishable latent factors (Anderson & Gerbing, 1988).

My last measurement model for my antecedents was a three-factor model with the three individual difference variables related to personality (conscientiousness, mindfulness, and organizational-based self-esteem as the latent variables; not shown). After adding error covariance between certain sets of items, both between items within the same scale and between items in the mindfulness and conscientiousness scales, this model had a fairly good fit to the data. Adding these error co-variances was theoretically justified, given it is reasonable to expect responses to personality measures to be correlated (Bagozzi, 1993). The CFI was .97, and the RMSEA was .06 (confidence interval ranged from .04 to .07). Although the SRMR value (.13) was not below the recommended cut-off of .08, this three-factor model had a considerably better fit than a one-factor model that grouped the three variables into one latent personality variable (χ^2_{diff} =1980.46, $p < .001$). These results provided evidence of distinguishable latent factors for the three measures of personality.

Outcome measurement models. I also used CFA to examine the outcome variable measurement models and show that my proposed outcomes were distinct from each other. First I tested a four-factor model with negative affect, work-to-nonwork

interference, burnout, and physical health symptoms as the latent variables to ensure that these negative outcome variables loaded onto four separate factors (not shown). Considering the small sample size and number of variables, the four-factor model had a fairly good fit to the data, after adding error covariance between several items within the same scales. The CFI (.88) was near the recommended threshold of .90, and the RMSEA was .08 (confidence interval was .06 to .09). The SRMR value (.12) was not below the recommended cut-off. Yet the chi-square difference test results showed that this four-factor model had a better fit than a one-factor model that combined negative affect with the three outcome variables (χ^2_{diff} =759.94, $p < .001$). Therefore, these results partially demonstrated that the negative affect items loaded onto a separate factor from the other negative outcome variables and that the latent variables of work-to-nonwork interference, burnout, and physical health symptoms were distinguishable from negative affect.

Next I tested a three-factor outcome model with work-to-nonwork interference, burnout, and physical health symptoms as the latent variables and compared it to a plausible alternative model that combined burnout and physical health symptoms into one latent variable (not shown). My three-factor outcome model had a fairly good fit to the data. The CFI (.97) was above the recommended threshold of .90, the RMSEA was .05, and the SRMR value was .08. The RMSEA confidence interval included .06 and the chi-square test showed that the three-factor model had a better fit than two-factor model (χ^2_{diff} =862.52, $p < .001$), in which burnout and physical health symptoms were combined into one latent health variable and work-to-nonwork interference was the other latent variable. These results showed that the measurement items for WHI, burnout, and physical health symptoms loaded onto separate factors and were distinct latent variables.

Descriptives. The means, standard deviations, correlations, and reliability coefficients for all final scales are in Table 17a and 17b. There were a total of 132 work intrusions among the 68 participants, with the mean number of intrusions = 2.35 (*sd* = 1.87), with participants experiencing a minimum one intrusion to a maximum of ten intrusions during the daily study period. Table 18 shows the percentages for each category of the episode-level contextual variables. Most of the work intrusions occurred on regular work days (i.e., Monday through Friday; 88%), during the evening hours (31%), and while at home (59%). Participants were usually with their significant others (48%) or alone (36%) at the time of the intrusions, and were typically engaged in leisure activities (52%). The most common source of a work intrusion was a co-worker/colleague (49%). Over half of the intrusions were telephone calls/missed calls (57%). The nature of the intrusion was most commonly a question or request for information (39%).

Among the 68 participants who experienced at least one work intrusion, 55 reported at least one unplanned nonwork-to-work role switch in response to an intrusion. There were a total of 100 unplanned role switching responses among these 55 participants, with the mean number of role switches = 1.47 (*sd* = 1.20). The number of role switches among participants ranged from zero to four during the daily study period. The most common type of role switching response was thinking about the work intrusion (40%), followed by telephone use (28%), Smartphone use for email (12%), a work task not involving emails or phone calls (e.g., non-email computer use, 12%), and computer use for email (7%). The length of an unplanned role switching response ranged from less than one minute up to 5 hours, and the mean was 50 minutes (*sd* = 136.32).

The correlation results indicated that several relationships between variables were in the expected direction. The following summary of the correlation results corresponds to my predictions, and revealed some other notable results. At the episode-level (see Table 17a), intrusion significance ($r = .28$, $p < .01$) and intrusion pressure ($r = .25$, $p < .01$) were positively related to the decision to respond to an intrusion (i.e., role switch response). Emergency intrusion ($r = .22$, $p < .05$), intrusion pressure ($r = .54$, $p < .01$), and role switch length ($r = .23$, $p < .05$) were positively correlated with role switching mental difficulty. Intrusion pressure ($r = .43$, $p < .01$), requests for help ($r = .25$, $p < .05$), and role switch length ($r = .29$, $p < .01$) were positively related to role switching physical effort. Intrusion pressure ($r = .53$, $p < .01$), role switching difficulty ($r = .65$, $p < .01$), and role switching physical effort ($r = .48$, $p < .01$) were positively related to negative affect.

For the level-2 variables (see Table 17b), job flexibility was positively related to role switching response ($r = .24$, $p < .05$). Work role overload was positively related to unplanned role switching difficulty ($r = .60$, $p < .01$). Living with Children under the age of five was also positively correlated with role switching difficulty ($r = .36$, $p < .01$). Work role identification was positively correlated with role switching physical effort ($r = .30$, $p < .05$). For the person-level outcome variables (see Table 7b), work-to-nonwork interference (WHI) was positively related to role switching difficulty ($r = .37$, $p < .01$). Burnout was negatively correlated with work intrusion significance ($r = -.39$, $p < .01$) and positively correlated with role switching difficulty ($r = .34$, $p < .05$). Poor physical health symptoms were positively related to work intrusion and role switching frequency ($r = .41$, $p < .01$; $r = .36$, $p < .01$, respectively).

Overview of hypotheses testing and exploratory analyses. First I discuss the HGLM and HLM results for the cross-level models testing level-1 antecedents (contextual variables and intrusion characteristics) and level-2 antecedents (job characteristics, individual difference variables, and participant characteristics) of unplanned nonwork-to-work role switching response. Then I discuss the HLM results for the cross-level models testing level-1 and level-2 antecedents of unplanned nonwork-to-work role switching mental difficulty and physical effort. This section is followed by a discussion of the HLM results for the cross-level models testing level-1 (e.g., role switching difficulty) and level-2 antecedents (e.g., role switching frequency) of the level-1 affect outcomes. Note that since daily work role overload and daily hassles did not significantly vary within persons, these data were aggregated to the person-level.

I also present the hierarchical multiple regression results for models that tested level-1 antecedents of the three level-2 employee health outcomes (work-to-nonwork interference, burnout, and poor physical health symptoms). In addition, I discuss the findings for relevant exploratory analyses.

Before conducting any of the above tests, I examined the relationships between my level-1 unplanned role switching variables and level-2 neuroticism and daily hassles variables, which were included as potential control variables as they have been shown to influence how individuals respond to survey items (Spector & Brannick, 2011). Individuals who experience stress as a result of daily hassles and neurotic individuals may over-report the frequency and difficulty of their unplanned role switching episodes. Thus, I examined intercepts-as-outcomes models that included neuroticism and daily hassles as level-2 predictors of the level-1 unplanned role switching variables.

Unplanned nonwork-to-work role switching response. Given that the standard deviation for unplanned role switching frequency across the daily study period was only 1.20, I expected less between-person variance than within-person variance in the role switching response variable. First I analyzed the unconditional (i.e., null) multilevel model of unplanned nonwork-to-work role switching response to compare the within-person and between-person variability. As expected, the non-significant random effect indicated an invariant level-1 relationship (i.e., no significant unexplained variation) between persons for unplanned role switching response (Peeters et al., 2004). I used ANOVA to partition the total variance into within- and between-persons variance to determine whether there was more within- than between-person variation. Indeed, there was more within-person than between-person variance, ICC(1) = .31. These findings showed that a substantial portion of the variance in unplanned role switching response could be attributed to within-person variation.

I conducted HGLM with this binary outcome variable to test level-1 and level-2 antecedents. I found that the estimated log odds of responding to an intrusion (γ_{00}) = 3.21 (SE = .24); the positive coefficient indicates that the odds of responding were greater than .50., the random effect for the slope was non-significant, suggesting that unplanned nonwork-to-work role response did not vary significantly between persons. Neuroticism and daily hassles were not related to unplanned nonwork-to-work role switching response, so I did not control for these variables in the following models.

Results for exploratory tests of level-1 antecedents of unplanned nonwork-to-work role switching response. The results from Study 1 suggested that certain episodic variables (e.g., context and intrusion characteristics) may be related to individuals'

decisions to respond to intrusions, so I tested these as level-1 antecedents (see Table 19). Intrusion significance was not related to unplanned role switching response (Model 2). Model 3 results showed intrusion pressure was significantly related to unplanned role switching responses (odds ratio = 2.04), which is consistent with the correlation results. The odds ratio indicated that when individuals perceived pressure to respond to intrusions, they were twice as likely to respond compared to when they did not perceive pressure. The marginally significant random effect indicated that the intrusion pressure relationship varied across persons. I controlled for intrusion pressure when testing for level-2 antecedents of role switching response.

Results for level-2 antecedents of unplanned nonwork-to-work role switching response. Table 20 shows the results of testing my proposed level-2 antecedents of unplanned nonwork-to-work role switching response, controlling for intrusion pressure. For hypothesis 2a, I predicted that job flexibility would be positively related to the decision to respond and found support for this hypothesis (see Model 3; odds ratio = 1.55). Job flexibility reduced the between-person random effects for the model intercept (Model 1 vs. Model 3), and thus explained some of the between-person variation in individuals' responses to work intrusions. The odds ratio indicated that employees who reported more flexibility in their jobs were 55% more likely to respond to work intrusions, compared to those with less job flexibility. However, work role overload (hypothesis 1a; Model 2) and job insecurity (hypothesis 3; Model 4) were not related to unplanned role switching responses, thus hypotheses 1a and 3 were not supported.

I also predicted that work role identification and integration boundary management strategy would be positively related to the decision to respond to intrusions

(hypotheses 5a and 6a, respectively), and that nonwork role identification would be negatively related to the decision to respond (hypothesis 5c). None of these individual characteristics were related to the decision to respond to intrusions (Table 21). Therefore, I did find any support for hypotheses 5a, 5c, or 6a.

Next I predicted that conscientiousness, mindfulness, and organizational-based self-esteem would be positively related to the decision to respond to intrusions (hypotheses 7a, 8a, and 9a, respectively). Table 22 shows that none of these personality variables were significantly related to unplanned switching response. So I did not find support for hypotheses 7a, 8a, and 9a.

I also predicted that being female and total weekly work hours would be negatively related to the decision to respond to intrusions (hypotheses 10a and 11a, respectively), and that organizational tenure would be positively related to the decision to respond (hypothesis 12). Table 23 shows that none of the participant characteristics were significantly related to unplanned nonwork-to-work role switching responses. I did find support for hypotheses 10a, 11a, or 12.

In summary, these findings suggest that the pressure associated with certain intrusions and the flexible nature of jobs were important factors with significant relationships to the likelihood that individuals would respond to unexpected work intrusions during nonwork hours. Individual difference variables did not seem to play a role in individuals' decisions to respond to work intrusions.

Unplanned nonwork-to-work role switching mental difficulty. For my next level-1 outcome, I analyzed the unconditional (i.e., null) multilevel model of unplanned nonwork-to-work role switching mental difficulty. I found that the grand mean for

unplanned nonwork-to-work role switching difficulty (γ_{00}) = 3.48 (SE = .24). The results showed a significant random coefficient for unplanned nonwork-to-work role switching difficultly indicating significant between-person variation. Additionally, ANOVA results indicated that there was more within-person than between-person variance, ICC(1) = .45, which suggested that it was appropriate to use HLM to partition the variability of role switching difficulty into within- and between-person components. Neuroticism and daily hassles were not related to role switching difficulty, so I did not control for these variables in the following HLM models.

Results for exploratory tests of level-1 antecedents of unplanned nonwork-to-work role switching mental difficulty. First I explored level-1 relationships to determine whether any episodic variables could explain variation in unplanned role switching mental difficulty. Study 1 findings suggested that intrusion pressure and significance were related to role switching mental difficulty. Also, my correlation results showed that emergency intrusions, intrusion significance, and intrusion pressure were all positively related to role switching mental difficulty, so I tested these as level-1 antecedents (Table 24). Model 2 results showed intrusion significance as marginally positively related to participants' reported unplanned nonwork-to-work role switching mental difficulty (γ = .26, $p < .10$). The significant random effect indicated that the intrusion significance relationship varied across persons. Consistent with the correlation results, Model 3 results indicated that intrusion pressure was positively related to unplanned role switching difficulty (γ = .49, $p < .001$). The significant random effect indicated that the intrusion pressure relationship also varied across persons.

Results for level-2 antecedents of unplanned nonwork-to-work role switching mental difficulty. Given the results of my exploratory analyses, I controlled for work intrusion pressure in this next set of analyses. I tested whether work role overload (hypothesis 1b) and job flexibility (hypothesis 2b) were positively related to role switching mental difficulty (see Table 25). Model 1 indicated that work role overload was positively related to unplanned role switching difficulty ($\gamma = .66$, $p < .001$), which supports hypothesis 1b. Work role overload reduced the between-person random effects for the model intercept ($\square^2 = .07$; Model 1 vs. Model 3), and thus explained some of the between-person variation in individuals' role switching mental difficulty. However, job flexibility (hypothesis 2b) was not significantly related to role switching mental difficulty, thus hypothesis 2b was not supported.

I also tested whether work role identification (hypothesis 5b) and integration boundary management strategy (hypothesis 6b) were negatively related to role switching difficulty, and whether nonwork role identification (hypotheses 5d) was negatively related to difficulty. The results for the models in Table 26 suggested that these individual characteristics were not related to unplanned nonwork-to-work role switching mental difficulty. Therefore, hypotheses 5b and 5d, and 6b were not supported.

Next, I tested a second set of individual difference variables to determine whether conscientiousness (hypothesis 7b) was positively related to role switching mental difficulty, and whether mindfulness (hypothesis 8b) and organization-based self-esteem (hypotheses 9d) were negatively related to difficulty. The model results in Table 27 suggested that these three personality variables were not related to unplanned role switching mental difficulty, so hypotheses 7ab, 8b, and 9d were not supported.

In the next set of analyses I tested whether being female (hypothesis 10a), total work hours (hypothesis 11a), and children under five (exploratory, based on correlation results) were positively related to role switching mental difficulty (see Table 28). Model 2 indicated the being female was not related to unplanned role switching mental difficulty, so I did not find support for hypothesis 10a. However, Model 3 showed a marginally positive relationship between total weekly work hours and unplanned role switching mental difficulty ($\gamma = .04$, $p < .10$), which partially supports hypothesis 11a. Work hours reduced the between-person random effects for the model intercept, but the effect size was small ($\square^2 = .01$; Model 1 vs. Model 3), and thus explained some of the between-person variation in individuals' role switching mental difficulty. Model 4 results indicated a significant positive relationship between children under five and unplanned role switching mental difficulty ($\gamma = 1.22$, $p < .01$; exploratory), which was consistent with the correlation results. Children under five reduced the between-person random effects for the model intercept, although the effect size was small ($\square^2 = .02$; Model 1 vs. Model 4), and thus explained some of the between-person variation in individuals' role switching mental difficulty.

The findings for unplanned nonwork-to-work role switching mental difficulty suggest that perceived pressure to respond to intrusions, feeling overloaded at work, working many hours, and being a parent of young children contribute to how mentally difficult unplanned role switching is for individuals. In contrast, individual characteristics related to how one manages and identifies with work and nonwork roles as well as personality variables do not seem to play a role in role switching mental difficulty.

Unplanned nonwork-to-work role switching physical effort. All analyses testing the outcomes of unplanned nonwork-to-work role switching physical effort (i.e., the extent of physical effort required to switch roles) were exploratory since this was a variable that emerged as important from Study 1. For my first set of analyses I examined the unconditional (i.e., null) multilevel model. A significant random coefficient for unplanned nonwork-to-work role switching physical effort indicated significant between-person variation, and ANOVA results showed that there was more between-person than within-person variance, ICC(1) = .72. So then I explored whether any level-1 or level-2 variables were antecedents of unplanned nonwork-to-work role switching physical effort as the outcome. Neuroticism and daily hassles were not related to this outcome, so I did not control for these variables.

Results for exploratory tests of level-1 and level-2 antecedents of unplanned nonwork-to-work role switching physical effort. Based on Study 1 findings and my correlation results, I tested several level-1 and level-2 antecedents of unplanned nonwork-to-work role switching physical effort, as a set of exploratory analyses. Model 3 results in Table 29 showed that intrusion significance was positively related to unplanned nonwork-to-work role switching physical effort ($\gamma = .49$, $p < .001$). The significant random effect indicated that the intrusion significance relationship varied across persons. Consistent with the correlation results, Model 4 results suggested that intrusion pressure was positively related to unplanned nonwork-to-work role switching physical effort ($\gamma = .42$, $p < .01$). The significant random effect indicated that the intrusion pressure relationship varied across persons. I controlled for intrusion significance and pressure when testing for level-2 antecedents of unplanned role switching physical effort.

Based on the correlation results, I tested whether work role overload and job flexibility were related to unplanned role switching physical effort (see Table 30). The results showed that these two job characteristics were not significant predictors of unplanned role switching physical difficulty.

Based on prior theory, I tested integration boundary management strategy and work role identification as predictors of unplanned role switching physical effort. Model 2 results in Table 31 showed integration strategy as positively related to physical effort ($\gamma = .49$, $p < .05$). Integration strategy reduced the between-person random effects for the model intercept (Model 1 vs. Model 2), and thus explained some of the between-person variation in individuals' role switching physical effort, but the effect size was very small ($\square^2 = .00$). Model 3 results showed work role identification was also positively related to physical effort ($\gamma = .56$, $p < .05$), which was consistent with the correlation results. Work role identification reduced the between-person random effects for the model intercept (Model 1 vs. Model 3) and explained some of the between-person variation in individuals' role switching physical effort, with a small effect size ($\square^2 = .01$).

In summary, the findings indicated that several aspects of intrusions contributed to the physical effort required to switch roles. But in addition to the characteristics of intrusions, individual characteristics were also a factor in how much physical effort unplanned role switching requires. In general, individuals who tend to integrate their work and nonwork roles and those who strongly identify with their work roles may expend more physical effort when switching roles compared to individuals who reported less integration or identification with work roles.

Table 32 shows a summary of the results for predicting unplanned nonwork-to-work role switching response, mental difficulty, and physical effort. There were some similarities and differences in the predictors of these different role switching outcomes. Perceived pressure to respond to intrusions was related to all three outcomes (role switching responses, difficulty, and physical effort). Personality variables were not factors for any of these role switching outcomes. Notably, the relationships of job characteristics, individual characteristics, and participant characteristics differed depending on whether I was predicting role switching responses, mental difficulty, or physical effort. Although work role overload, total work hours, and having children under the age five were not related to the decision to respond to intrusions, they were all associated with role switching mental difficulty. Thus, whereas the nature of an intrusion and one's job were factors relating to whether someone actually responded to an intrusion, experiences that lead to more time spent in either work or nonwork roles seemed to contribute to role switching mental difficulty. For role switching physical effort, not only did the nature of the intrusion matter, but also individual difference variables reflecting the ways in which individuals maintain their work and nonwork boundaries and how much they identify with their work roles.

Negative affect. For negative affect, I examined the unconditional (i.e., null) multilevel models with no predictors for negative affect. I found a significant random coefficient for negative affect. Moreover, ANOVA results showed that there was considerable between-person variance (57%). These results suggested that it was appropriate to use HLM to partition the variability into within- and between-person

components for negative affect. Neuroticism and daily hassles were positively related to negative affect, so I controlled for these variables in the next set of analyses.

Results for exploratory tests of level-1 antecedents of negative affect. First, based on my correlation results I explored intrusion pressure as an antecedent of negative affect, and I also tested role switching response as an antecedent (research question 1; see Table 33). Consistent with the correlation results, Model 1 results showed intrusion pressure as significantly related to negative affect ($\gamma = .31$). The more pressure individuals perceived to respond to intrusions, the more negative affect they reported. The significant random effect indicated that the intrusion pressure relationship varied across persons. Model 2 results indicated that unplanned role switching response was not related to negative affect.

Based on my correlation results, I also explored role switching mental difficulty, physical effort, and length (in minutes) as predictors of negative affect. Model 1 in Table 34 shows role switching mental difficulty was significantly related to negative affect ($\gamma = .60$), which was consistent with the correlation results. The more mentally difficult role switching experiences were, the more negative affect individuals reported. Also consistent with the correlation results, Model 2 shows role switching physical effort as significantly related to negative affect ($\gamma = .45$). The more physical effort role switching required, the more negative affect individuals reported.

Refer to Table 32 for a summary of the results for predicting negative affect. The actual work intrusion and response did not seem to matter in how much negative affect an individual feels after experiencing an intrusion. Instead, the characteristics of the intrusion and the characteristics of the role switching response seemed more important.

Results for antecedents of employee health outcomes. Next I sought to examine whether employees' experiences with work intrusions and unplanned nonwork-to-work role switching were harmful to their personal lives and health. I conducted hierarchical multiple regression to test hypotheses predicting that unplanned role switching would be positively related to work-to-nonwork interference (WHI), burnout, and poor physical health symptoms. I also explored work intrusion variables as predictors. For each test, I controlled for variables that were related to the three outcomes (neuroticism, daily hassles, gender, and total number of work hours during the daily study period).

See Table 35 for the regression results for the outcome of WHI. For Hypothesis 13a I predicted that unplanned nonwork-to-work role switching mental difficulty would be positively related to WHI. Model 1 shows that this hypothesis was supported, $R^2_{\text{change}} = .07$, $F_{\text{change}} = 5.24$, $p < .05$, $\beta = .27$, $p < .05$, which was also consistent with the correlation results. Unplanned nonwork-to-work role switching mental difficulty explained 7% of the variance in WHI, beyond what was explained by the control variables. Employees who reported more mental difficulty when switching roles also reported higher levels of WHI compared to those who reported less mental difficulty. For hypothesis 13b I predicted that unplanned nonwork-to-work role switching frequency would be positively related to WHI (Model 2). This hypothesis was not supported, $R^2_{\text{change}} = .02$, $F_{\text{change}} = 2.10$, *ns*. I conducted exploratory analyses on the other dimensions of role switching, which revealed that unplanned role switching physical effort and length were not related to WHI. I also conducted exploratory analyses to determine whether work intrusion significance, pressure, or frequency were related to WHI (not shown), and none were significant.

Tables 36 and 37 show the regression results for predicting burnout. For hypothesis 15a I predicted that unplanned nonwork-to-work role switching mental difficulty would be positively related to burnout (see Table 36, Model 1), which was partially supported, $R^2_{change} = .05$, $F_{change} = 3.90$, $p = .05$. Unplanned nonwork-to-work role switching mental difficulty explained 5% of the variance in burnout, beyond what was explained by the control variables. Employees who reported more mental difficulty when switching roles also reported higher levels of burnout compared to those who reported less difficulty. For hypothesis 15b I predicted that unplanned nonwork-to-work role switching frequency would be positively related to burnout (see Table 36, Model 2). This hypothesis was not support, $R^2_{change} = .02$, $F_{change} = 1.23$, *ns*. Exploratory analyses showed that unplanned nonwork-to-work role switching physical effort and length were not related to burnout. However, exploratory analyses indicated that work intrusion significance was negatively related to burnout (see Table 37, Model 2), $R^2_{change} = .12$, $F_{change} = 10.58$, $p < .01$, $\beta = -.37$, $p < .05$, with intrusion significance explaining 12% of unique variance in burnout. Therefore, employees who perceived work intrusions as significant (i.e., of importance) reported less burnout compared to those who perceived work intrusions as less important, which was consistent with the correlation results.

See Tables 38 and 39 for the regression results predicting poor physical health symptoms. For hypothesis 16a I predicted that unplanned nonwork-to-work role switching mental difficulty would be positively related to poor physical health symptoms (see Table 38, Model 1), but this was not supported, $R^2_{change} = .01$, $F_{change} = .56$, *ns*. For hypothesis 16b I predicted that unplanned nonwork-to-work role switching frequency would be positively related to poor physical health symptoms (Table 38, Model 2).

Consistent with the correlation results, this prediction was supported, $R^2_{change} = .10$, $F_{change} = 8.63$, $p < .01$, $\beta = .34$, $p < .01$. Role switching frequency explained 10% of unique variance in poor physical health symptoms. Employees who reported more frequent unplanned role switching reported more poor physical health symptoms than those who reported less frequent role switching.

Consistent with my correlation results, exploratory analyses revealed that work intrusion frequency was positively related to poor physical health symptoms, $R^2_{change} = .07$, $F_{change} = 6.13$, $p < .05$, $\beta = .29$, $p < .05$. Intrusion frequency explained 7% of the variance in physical health symptoms (see Table 39, Model 1). Thus, employees who reported more frequent work intrusions reported more poor physical health symptoms compared to those who reported less work intrusions. However, there were no significant findings for the relationships of unplanned nonwork-to-work role switching physical effort and response length with poor physical health symptoms (see Table 39, Model 2 and Model 3).

See Table 40 for a summary of the results for WHI, burnout, and poor physical health symptoms. The predictors of these outcomes differed. After controlling for neuroticism and daily hassles, the frequency of intrusions and role switching responses were both related to poor physical health symptoms. However, it is not just the frequency of these experiences that led to negative consequences, as the mental difficulty of unplanned nonwork-to-work role switching was related to both WHI and burnout. Also, most interestingly, the more significant intrusions were perceived to be, the less burnout individuals reported, even after controlling for both neuroticism and daily hassles.

Study 3 discussion

Overview. Following Hinkin's (1998) guidelines for scale development, the goals of Study 3 were to assess the psychometric properties of my new measurement scales and begin developing a nomological network of variables surrounding unplanned nonwork-to-work role switching. I achieved these objectives by conducting a repeated measures study with episodic measures of work intrusion context, work intrusion characteristics, and unplanned nonwork-to-work role switching. An episodic approach to studying work intrusions helped to ensure that I captured discrete intrusions that may prompt unplanned nonwork-to-work role switching responses. A repeated measures approach also permitted me to examine the relationships among antecedents and outcomes of unplanned role switching over a short period of time, rather than cross-sectionally. First, I examined the reliability, dimensionality, and discriminant validity of my new measures of unplanned nonwork-to-work role switching. Then I tested several theory-based relationships between unplanned nonwork-to-work role switching and my proposed antecedent and outcome variables. I also explored the role of context and intrusion characteristics when predicting unplanned role switching responses, mental difficulty, and physical effort.

The findings for Study 3 demonstrated the reliability and multi-dimensionality of my new measures, provided evidence that unplanned nonwork-to-work role switching is a different construct than similar role transitioning constructs from prior research, and helped identify several antecedents and outcomes of unplanned role switching episodes. Thus, the empirical evidence from Study 3 helped me further refine my new measures and begin to develop a nomological net of important variables surrounding unplanned nonwork-to-work role switching.

In the following sections I first discuss the findings for the hypothesized relationships among the proposed antecedent and outcome variables for unplanned nonwork-to-work role switching. This discussion also includes the findings for any exploratory analyses that were conducted. I focus on the antecedents of unplanned nonwork-to-work role switching responses, mental difficulty, and physical effort. Then I discuss the relationships of the employee outcomes (negative affect, work-to-nonwork interference, burnout, and physical health symptoms) with each aspect of unplanned nonwork-to-work role switching (frequency, mental difficulty, and physical effort). Later in the General Discussion (in Chapter 6), I discuss how these results are related to the qualitative findings from Study 1 and also present the theoretical and practical implications of the results.

Antecedents of unplanned nonwork-to-work role switching responses. As prior studies have not examined role transitioning at an episodic level, the role of intrusion characteristics has not been examined, so I conducted exploratory analyses with these variables. I found that individuals who perceived pressure to respond to intrusions were likely to actually respond to intrusions. Perceptions of pressure may stem from an organization's culture, such that the company leaders and/or supervisor have norms or expectations for employees to always be accessible and available to work when needed during nonwork hours (Major et al., 2007; Thompson et al., 1999). Prior research suggests that working in a time-demanding organization may be associated with frequent work intrusions (Brett & Stroh, 2003; Brown & Ryan, 2003; Dikkers et al., 2007; Kreiner, 2006; Major et al., 2007), which also implies that employees in these types of organizations may engage in frequent unplanned role switching. Thus, it is important to

go beyond individual preferences, which has been the focus of prior related research, and also consider the characteristics of the actual intrusions to better understand employees' responses to work intrusions. Although individuals may also put pressure on themselves to respond to intrusions, pressure from external sources (e.g., a boss) may be even more powerful.

I hypothesized that several job characteristics, individual characteristics, personality variables, and participant characteristics would be related to unplanned nonwork-to-work role switching responses. Kossek et al.'s (2005) flexibility enactment theory posited that boundary management strategies are shaped not only by individual differences, but also by the structure of a job. Consistent with this theory, I found that individuals working in flexible jobs (i.e., flexibility in when and where they work) were likely to respond to intrusions. However, work role overload and job insecurity were not related to the likelihood of responding, suggesting that only certain aspects of jobs are relevant when predicting responses to intrusions. Compared to work role overload and job insecurity, the flexibility associated with a job is more closely linked with how individuals maintain the boundaries surrounding their work and nonwork roles. Indeed, boundary management theory (Ashforth et al., 2000) suggests that the structure of a job may impact an individual's role transitioning behavior, as loose temporal and physical work boundaries allow individuals to respond to work intrusions during their nonwork time. Consistent with this theory, flexibility in when and where individuals can perform their work roles seems to be a factor when responding to work intrusions during nonwork hours.

In contrast, I did not find support for the role of individual characteristics, personality variables, or participant characteristics as antecedents. My lack of significant findings for work and nonwork role identification and integration boundary management strategy are inconsistent with the integration-segmentation model, which suggests that individual preferences would be a major factor when deciding whether to respond to work intrusions. However, prior research (e.g., Olson-Buchanan & Boswell; 2006; Hecht & Allen, 2009) did not examine responses to discrete work intrusions, but instead was based on cross-sectional data. So data were collected at one point in time and required participants to consolidate past experiences rather than think about discrete events that had occurred on a particular day. Individual preferences may play a role when asking individuals about their aggregated role transitioning tendencies, but may be overridden when examining specific experiences with work intrusions.

I also did not find support for men being more likely than women to respond to intrusions, which is somewhat inconsistent with prior studies that have shown men as more likely to work during nonwork hours, more likely to use communicative technology to perform work during their nonwork hours, and more likely to engage in family to work role transitions (Boswell & Olson-Buchanan, 2007; Winkel & Clayton, 2009). However, it was not clear whether the examined role transitions in prior research were unplanned or planned. It is very possible that men may engage in more planned work at home. Indeed, past research has shown that women, compared to men, prefer to keep their personal lives more segmented from their work lives so that they can fully focus on their nonwork roles during nonwork time (Bulger et al., 2007; Rothbard et al., 2005). However, men may not necessarily be more likely to engage in *unplanned* role transitions in response to

unexpected intrusions since both men and women are now heavily involved in work and nonwork roles. Also, since women are now more likely to hold jobs that were formerly held mostly by men (e.g., managerial and leadership positions), the data collected in these earlier studies may have reflected greater gender segregation of occupations, with women less likely to hold jobs that require working during nonwork hours.

Also contrary to my prediction, weekly work hours were not negatively related to unplanned role switching responses to intrusions. In fact, the correlation results showed that the relationship was in the positive direction. This finding is inconsistent with the segmentation model (Blood & Wolfe, 1960; Dubin, 1973), which suggests that confining work to the workplace helps keep work and nonwork domains segmented, which should decrease the likelihood of having to respond to work intrusions. However, Kreiner et al. (2006) found that hours worked per week were negatively associated with desire for segmentation. There may be a confounding variable that explains this relationship. Certain characteristics of individuals who tend to work long hours may be particularly relevant. For instance, workaholics tend to invest a great deal of time and effort in their work role at the expense of nonwork activities (Andreassen, Ursin, & Eriksen, 2007). Also, workaholics tend to be immersed in their work role even while at home (Taris et al., 2005). Not surprisingly, studies have shown positive relationships between workaholism and work–to-family conflict (Bakker, Demerouti, & Burke, 2009; Taris, Schaufeli, & Verhoeven, 2005). Therefore, individuals who tend to work long hours in the workplace may also have a tendency to work during their nonwork hours while in nonwork locations.

My lack of support for a negative relationship between organizational tenure and unplanned role switching response is also inconsistent with prior findings (Bulger et al., 2007; Olson-Buchanan & Boswell, 2006). However, these earlier studies were based on cross-sectional data that focused on how often individuals allowed the work role to permeate into their nonwork domains, rather than how individuals responded to discrete work intrusions. Situational factors and external pressures may override individual characteristics when examining discrete work intrusions, as in the present study.

In sum, the findings for the antecedents of unplanned role switching responses helped clarify the nomological net of variables for unplanned nonwork-to-work role switching response. Boundary management theory and the integration-segmentation model suggest that role identification and individual preferences to integrate roles may be factors in responding to work intrusions, and prior studies suggest that certain types of individuals (e.g., men) may be more likely to respond to intrusions. However, my findings underscored the importance of examining factors beyond the individual when predicting unplanned role switching responses to intrusions, such as intrusion and job characteristics. One difference between my research and previous studies is that I took an episodic approach to testing antecedents of unplanned role switching responses. This approach is more appropriate than a levels approach for studying discrete instances of work intruding on nonwork time. The intrusions that I examined occurred at specific nonwork times and in specific nonwork places, and had to be addressed in the short-term by participants. The factors leading individuals to respond to specific intrusions may be very different than the factors that predict an individual's role transitioning behavior at a higher level of analysis (e.g., during the past month). Also, cross-sectional research

designs (as were used in prior related studies) in which individuals have to report on past role transitioning behavior may be imprecise, as they must retrospectively consolidate role transitioning episodes over a period of time, such as the past week or month. Thus, a levels approach is more likely to be measuring an individual's role transitioning tendencies rather than actual role transitioning behavior at discrete points in time.

The inconsistencies between results of the present study and prior research suggest that the antecedents of behavioral tendencies are different than antecedents of specific behaviors in reaction to discrete events. For instance, a preferred boundary management strategy may be important when asking individuals about their role transitioning behavior over time, but these strategies may be overridden when confronted with certain types of work intrusions at specific points in time. Therefore, future studies should take this distinction into account and consider testing different types of antecedents depending on the level of analysis for the role transitioning behavior. For example, if responses to discrete intrusions are being examined, then aspects of the intrusion should be examined. Conversely, if individuals are being asked about their role switching tendencies over the past month, then their role integration preferences should be examined.

Antecedents of unplanned nonwork-to-work role switching mental difficulty. Prior to the present study, there was no research examining predictors of unplanned nonwork-to-work role switching mental difficulty. Thus, these findings shed light on what is really important when trying to understand how much mental difficulty individuals may experience when engaging in unplanned role switching. First I explored whether certain intrusion characteristics were related to unplanned nonwork-to-work role switching

mental difficulty, and my results highlighted the importance of intrusion characteristics. Intrusion pressure and intrusion significance were related to unplanned nonwork-to-work role switching mental difficulty. Participants who perceived pressure to respond to intrusions reported more role switching mental difficulty than those who perceived less pressure. The resource drain model may explain this relationships (Edwards & Rothbard, 2000), as perceived pressure may prompt individuals to invest more mental resources into their role switching processes.

Participants who perceived intrusions as more important (e.g., something that only they could address) reported more mental difficulty compared to those who perceived intrusions as less important. These findings may be explained by organizational-based self-esteem (OBSE) research. When an employee feels that there is a work issue that requires his/her help, this may engender feelings of self-worth (Bowling, 2010), which may motivate one to expend more mental resources when switching roles compared to a more trivial work issue. Consistent with this reasoning, OBSE was significantly correlated with intrusion significance in the present study.

Also related to this finding for intrusion significance is research by Semmer and colleagues on illegitimate tasks (Semmer, Tschan, Meier, Facchin, & Jacobshagen, 2010). Illegitimate tasks are tasks that constitute "identity stressors" (Thoits, 1991) such that they violate an individual's professional identity. Given someone's role within an organization (e.g., supervisor), there are certain tasks that one may expected to do as well as tasks that one may *not* be expected to fulfill. Being asked to perform a work task that an individual considers to be incompatible with his/her work role may be perceived as an identity-threatening stressor and an offense to the self (Semmer, Jacobshagen, Meier, &

Elfering, 2007). Work tasks that are considered unreasonable or unnecessary may be perceived as illegitimate (Semmer et al., 2010). Illegitimate tasks have been associated with negative work outcomes, such as counterproductive work behavior, which can certainly lead to feelings of burnout.

I hypothesized that several job characteristics, individual characteristics, personality variables, and participant characteristics would be related to unplanned nonwork-to-work role switching mental difficulty. I found that participants who perceived higher levels of work role overload reported more mental difficulty than those who perceived less work role overload, even after controlling for intrusion characteristics. According to role stress theory, employees who are overloaded at work tend to feel overworked, rushed, unable to meet work requirements without overworking, and short of time to fulfill work obligations (Kahn et al., 1964). Together, role stress theory and boundary management theory (Ashforth et al., 2000; Nippert-Eng, 1996) suggest that overloaded employees may perceive unexpected role switching episodes as mentally difficult since they are already overextended from their work roles. My findings supported these theory-based predictions. But contrary to my hypothesis, job flexibility was not related to unplanned role switching mental difficulty. So although a flexible job may make someone likely to respond to an intrusion, it does not necessarily make it easier to switch between roles.

None of my proposed individual characteristics (e.g., integration boundary management strategy and identification with work and nonwork roles) were related to unplanned role switching mental difficulty. My lack of significant findings suggests that individual preferences for role integration and the extent of identification with work and

nonwork roles may not be relevant when an individual is confronted with a work intrusion. The unexpected nature of the incident requires a quick decision about whether to respond or not, with little time to take into consideration one's preferences. Personality variables (e.g., conscientiousness) were also not related to role switching mental difficulty. The extent of mental difficulty an individual experiences when engaging in unplanned role switching seems to be more dependent on the situation (e.g., intrusion characteristics) rather than stable individual traits.

Prior role transitioning studies have controlled for demographic variables rather than testing them as predictors, so there is little prior research upon which to draw when discussing my findings for participant characteristics. I did not find any gender differences in unplanned nonwork-to-work role switching mental difficulty, which did not support my hypothesis. Although women may desire segmentation between work and nonwork roles so that they can focus on their nonwork roles during nonwork hours (Rothbard et al., 2005), unplanned role switching may be difficult for both men and women since it is more unexpected compared to planned work activities during nonwork hours. Also, given women's presence in jobs formerly held mostly by men and men's larger role in domestic responsibilities when they are part of a dual-career couple, prior research on gender differences in how work and nonwork role are segmented may not be as relevant for today's workers.

Employees who worked longer hours during the daily study period reported more unplanned nonwork-to-work role switching mental difficulty than those working less hours, which was consistent with my prediction. This finding can be explained by the resource drain model (Edwards and Rothbard, 2000). Employees who work many hours

in the workplace may find it mentally difficult to engage in unplanned role switching during nonwork hours while in nonwork locations, as they have already expended much of their personal resources while at work during the regular part of the work day.

Exploratory analyses revealed that participants with children under the age of five experienced more unplanned nonwork-to-work role switching mental difficulty than those without children under five-years-old. Bulger et al. (2007) suggested that individuals with young children may have complex boundary management strategies, as they must manage multiple life roles, thus making their responses to work intrusions during personal time a difficult experience. Also, according to the resource drain model (Edwards and Rothbard, 2000), parents may expend considerable mental resources (e.g., time, attention) while caring for young children during their personal time, which may leave fewer mental resources available for attending to the work role during nonwork hours. Therefore, a parent with young children who responds to a work intrusion may find it to be a particularly difficult experience.

In summary, the significant relationships of intrusion characteristics, job characteristics, and participant characteristics with unplanned nonwork-to-work role switching mental difficulty contribute greatly to our understanding of these issues as well as development of the nomological net of variables surrounding unplanned nonwork-to-work role switching mental difficulty. The findings highlight how individuals may differ in how much mental difficulty they experience when engaging in unplanned role switching during nonwork hours. Some of these differences may be due to characteristics of the intrusions (e.g., significance) or the job (e.g., work role overload), but participant characteristics (e.g., parental status) play a role as well. Individual differences and

personality variables do not seem as important. The common underlying theme across the antecedents is that unplanned role switching is a mentally difficult process for individuals when they have already expended mental resources in their demanding work roles (e.g., overloaded roles, long work hours) and/or nonwork roles (e.g., child care).

Antecedents of unplanned nonwork-to-work role switching physical effort. I explored several antecedents of unplanned nonwork-to-work role switching physical effort, which refers to the amount of physical effort an individual must expend in order to switch from a nonwork role to the work role. No prior research has examined predictors of unplanned role switching physical effort, so my findings help clarify what is most relevant when trying to understand how much physical effort individuals expend during unplanned role switching episodes. Similar to unplanned role switching mental difficulty, intrusion characteristics were related to how much physical effort individuals used when engaging in unplanned role switching. More specifically, intrusion significance and intrusion pressure were associated with unplanned nonwork-to-work role switching physical effort. Consistent with the interpretation discussed earlier, findings for intrusion significance may be explained by feelings of OBSE. When employees feel that their help is needed, their feelings of self-worth are likely to increase which therefore may motivate them to expend more physical effort when switching roles. The findings for intrusion pressure may be explained by the resource drain model. When employees feel pressured to respond to intrusions, they may expend more physical resources (e.g., energy) during role switching processes.

Similar to the findings about mental difficulty in connection with role switching, personality variables (e.g., conscientiousness) were not related to unplanned role

switching physical effort. The amount of physical effort an individual uses when engaging in unplanned role switching seems to be more dependent on the situation (e.g., intrusion characteristics) rather than stable individual traits. However, in contrast with role switching mental difficulty, job characteristics (e.g., work role overload) were not related to unplanned role switching physical effort. Thus, the nature of the job does not determine how much physical effort an individual may expend when engaging in unplanned role switching. Instead, individual characteristics play a role. Preferences for integrating work and nonwork roles and the extent to which one identifies with the work role seem to determine how much physical effort an individual may expend when responding to an intrusion. Perhaps these preferences and propensities may help an individual decide how much physical energy they are willing to invest into a response.

Individuals who worked longer hours at the workplace during the work week reported less unplanned nonwork-to-work role switching physical effort compared to those working fewer hours. Both the resource drain hypothesis (Edwards & Rothbard, 2000) and the effort-recovery model (Meijman & Mulder, 1998) explain this finding. An employee who works long hours may expend most of his/her energy while in the work role during the regular part of his/her work day and therefore has inadequate physical resources available to dedicate to unplanned role switching during nonwork hours. Similarly, an employee who works long hours may not have a chance to fully recover from the work day, and so s/he may not be able to expend physical effort when switching roles during nonwork hours.

The findings for unplanned nonwork-to-work role switching physical effort imply that employees differ in the amount of physical effort expended in their unplanned role

switching experiences, depending on both the types of intrusions experienced and individual preferences. Similar to unplanned role switching mental difficulty, the perceived importance of an intrusion and perceived pressure to respond are related to how much physical effort an individual may expend when responding to an intrusion. In contrast to unplanned role switching mental difficulty for which individual preferences did not play a role, preferences to integrate work and nonwork roles and strong identification with the work role are related to how much physical effort one expends when responding to an intrusion. These differences in the predictors of mental and physical unplanned role switching difficulty imply that unplanned role switching is comprised of distinct physical and psychological processes.

Negative affect and unplanned nonwork-to-work role switching. I examined negative affect, work-to-nonwork interference (WHI), burnout, and physical health symptoms as outcomes of the different aspects of unplanned nonwork-to-work role switching. My findings suggest that aspects of work intrusions and unplanned role switching episodes may impact individuals' states of negative affect. First, the more pressure an individual feels to respond to an intrusion, the more negative affect s/he may experience following an unplanned role switching episode. Since perceived pressure to respond to intrusions may make employees feel as though they do not have a choice in whether to respond, they may experience negative feelings such as irritability. The norms or expectation to always be available to work during nonwork hours may make an individual perceive his/her job as a stressor, which may certainly lead to negative feelings (Gryzwacz, Almeida, Neupert, & Ettner, 2004; Zohar, Tzischinski, & Epstein, 2003).

Unplanned role switching mental and physical difficulty and the length of the response were all associated with negative affect. Prior work-life studies have shown a link between work-to-family conflict and negative emotions, such as guilt and hostility (e.g., Judge et al., 2006; Livingston & Judge, 2008). In fact, psychological detachment from the work role during evening hours has been linked with negative affect assessed during the same evening (Sonnentag & Bayer, 2005). Furthermore, low psychological detachment during evening hours has been positively related to negative affect the following morning (Sonnentag, Binnewies, & Mojza, 2008), and levels of psychological detachment from work at the end of the workweek have been linked with affect at the end of the workweek (Sonnentag, Mojza, et al., 2008). The underlying mechanism for these relationships is best explained by the effort- recovery model. Recovery experiences, such as relaxation during nonwork hours, give individuals opportunities to recuperate from workday demands, thereby reducing the negative impact of work demands on affect during nonwork hours (e.g., Sonnentag & Zijlstra, 2006). Long role switching episodes during nonwork time may prevent individuals from engaging in recovery experiences, and difficult role switching experiences may overpower the benefits of recovery experiences.

Work-to-nonwork interference and unplanned nonwork-to-work role switching. My results indicated that the frequency of unplanned role switching does not contribute to work-to-home interference (WHI). Instead, the extent to which the unplanned role switching episode is perceived as mentally difficult was related to feelings of WHI for employees. When abruptly switching from a nonwork role to the work role during nonwork hours, an individual must allocate finite personal resources to both the nonwork

role and the work role (Edwards & Rothbard, 2000; Hecht, 2001; Kahn et al., 1964; Marks, 1977). However, the number of unplanned role switching episodes does not seem to impact the amount of resources one must expend. Instead, unplanned role switching episodes that are mentally draining and distracting seem to be problematic, as they may create feelings of competition and interference between work and nonwork roles. Unplanned role switching mental difficulty has not been examined in prior research, so this finding helps clarify the underlying process of WHI. In the case of unplanned nonwork-to-work role switching, the domain-irrelevant role (i.e., work role) is favored over the domain-relevant role (i.e., nonwork role) for a short period of time. Perhaps the more mentally difficult an unplanned role switching episode is, the more an individual perceives the work role as competing with nonwork role activities.

This finding also contributes to our understanding of the underlying processes and can help explain prior findings on boundary strength. Weak nonwork boundaries that allow the work role to permeate and disrupt nonwork roles have been associated with WHI (Bulger et al. 2007; Clark, 2002; Hetch & Allen, 2009; Olson-Buchanan & Boswell, 2006; Voydanoff, 2005a; 2005b). When an intrusion permeates the nonwork domain and the individual decides to respond to that intrusion, there is a competition between work and nonwork roles for scarce mental resources, which may create feelings of WHI.

Burnout and unplanned nonwork-to-work role switching. The present study's findings suggested that neither unplanned role switching frequency nor the difficulty (mental and physical) of responding to intrusions are linked with feelings of burnout among employees. These results are not consistent with the effort-recovery model, which suggests that attending to the work role while in nonwork domains prevents individuals

from recovering from the work role, thus contributing to feelings of exhaustion. These results are also inconsistent with prior studies which found that persistent work-related technology use after work hours was positively related to psychological distress (Chesley, 2005), receiving job contacts while at home was positively related to perceived stress (Hyman et al., 2005; Voydanoff, 2005), and lack of psychological detachment from work during nonwork hours was related to emotional exhaustion (Sonnentag & Fritz, 2007; Sonnentag, Kuttler, et al., 2010). However, several of these studies did not control for neuroticism or total work hours which were both related to burnout in the present study. HVoydanoff (2005) and Sonnentag (2010) controlled for work hours only. Also, these studies did not examine aspects of work intrusions or unplanned role transitioning beyond their frequency.

However, the results for burnout are inconsistent with my finding for negative affect and WHI. It was predicted that when difficult role switches create feelings of negative affect and WHI, that employees would also experience feelings of burnout (i.e., emotional exhaustion). Instead, the results imply that the felt difficulty of switching roles is not as critical for burnout as the reasons for switching roles. Of particular note, the findings suggest that when individuals perceive intrusions as significant, such that they feel the intrusion is important and is something that only they can address, then they experience less burnout compared to intrusions that are perceived as less significant, based on these measures. This finding is consistent with prior OBSE research (Bowling, 2010; Pierce et al., 1989) and research on illegitimate tasks (Semner, 2007). An intrusion that is perceived as important or necessary by the individual may trigger feelings of self-worth related to the work role, and perhaps these feelings of importance buffer feelings of

burnout. Indeed, OBSE was positively correlated with intrusion significance in the present study. It is certainly also possible that existing levels of burnout distort the individual's perceptions about whether or not an intrusion is important. To help account for this alternative explanation, I controlled for daily hassles, which included hassles that may have occurred at work during the study period.

Poor physical health symptoms and unplanned nonwork-to-work role switching. The frequency of unplanned nonwork-to-work role switching seems to be more important for physical health than mental health (i.e., WHI, burnout). Both intrusion frequency and unplanned role switching frequency were related to self-reported poor health symptoms among employees. This finding is consistent with the effort-recovery model. Frequent unexpected work intrusions and unplanned role switching episodes during an employee's work week may prevent psychological detachment from the work role, which may cause negative short-term physical reactions to accumulate (Geurts et al., 2005; Meijman & Mulder, 1998). The more frequent the intrusions and unplanned role switching episodes are during a typical week, the less of a chance there is for an individual to stabilize. Instead, negative reactions may accumulate and/or intensify throughout the week. This finding is aligned with prior research, as a lack of psychological detachment from work has been positively related to psychosomatic complaints (e.g., feelings of dizziness and fatigue; Sonnentag, Kuttler, et al., 2010) and a need for recovery (e.g., feeling too tired to for personal activities; Sonnentag & Bayer, 2005; Sonnentag, Kuttler, et al., 2010).

Conclusions. The findings from Study 3 extended prior research and helped develop a nomological network of variables surrounding unplanned nonwork-to-work role switching. Not only was I able to identify several antecedent and outcome variables,

but I found that the antecedents and outcomes differed depending on which aspect of unplanned nonwork-to-work role switching was being examined (e.g., response versus difficulty). Thus, a more nuanced approach is needed when studying unplanned nonwork-to-work role switching, given it is such a complex construct.

Personality was not a factor for any of the unplanned role switching outcomes and so does not seem to fit in any models of unplanned nonwork-to-work role switching. In contrast, intrusion characteristics seems to be a particularly crucial element of unplanned role switching episodes, as they were related to unplanned role switching responses, mental difficulty, and physical effort. The role of job characteristics, individual characteristics, and participant characteristics differed depending on which aspect was examined. When predicting whether someone would respond to an intrusion, job flexibility was a key variable. However, job flexibility did not affect how much mental difficulty or physical effort was involved in an unplanned role switching episode. Instead, work role overload, total work hours, and having children under the age five were associated with unplanned role switching mental difficulty. Therefore, while the nature of the job may predict whether someone will respond to an intrusion, those who are already expending their resources in work and/or nonwork roles, either because they are overloaded or have multiple life roles (e.g., parent), are the ones who have more difficulty with unplanned role switching. When predicting unplanned role switching physical effort, the ways in which individuals maintain their work and nonwork boundaries and how much they identify with their work roles are critical.

The predictors of the strain-related outcome variables, i.e. WHI, burnout, and poor physical health symptoms, also differed. Although intrusions that are perceived as

important may not necessarily lead to burnout, physical health is negatively impacted by the number of times someone deals with intrusions and engages in unplanned role switching during a work week. However, it was not just the frequency of these experiences that led to negative consequences for employees. Negative affect and WHI were exacerbated by difficult unplanned nonwork-to-work role switching episodes.

In summary, depending on which aspect of unplanned role switching is being predicted, it is important to consider antecedents from various sources (e.g., the individual or the job) and at various levels (e.g., person-level and episode-level). Although specific predictors varied depending on the outcome variable, the findings suggest that various characteristics of work intrusions are generally important antecedents. Models predicting unplanned role switching responses should also take into consideration job characteristics that help employees loosen their work boundaries (e.g., job flexibility). When predicting unplanned nonwork-to-work role switching mental difficulty, models should include predictors that help explain resource drain, such as job characteristics associated with demanding jobs (e.g., work role overload) as well as personal life roles (e.g., parental status). For models predicting unplanned nonwork-to-work role switching physical effort, individual characteristics (e.g., role identification) are important to include.

Likewise, when predicting strain-related outcomes for employees, different models should be examined depending on which aspect of unplanned role switching is being examined. When examining the difficulty of unplanned role switching episodes, emotional and psychological outcomes are important. When examining the reasons for intrusions, employees' burnout levels are important. When examining the frequency of

intrusions and unplanned role switching episodes, physical health outcomes are most critical.

Study limitations and future research. As Maertz and Boyar (2011) noted, an episodic approach to research can be difficult, invasive, and time-consuming. Indeed, the practical constraints of the present study created several limitations. First, it was difficult to recruit employees and their significant others to participate in a ten-day study. It was also challenging to capture a large number of intrusions during the ten-day study period. Consequently, the final sample size for my level-2 units (i.e., persons) consisted of only 68 participants who experienced at least one intrusion during the daily study period. For multi-level studies, Raudenbush and colleagues (Raudenbush & Bryk, 2002; Raudenbush et al., 2004) recommended having 10 level-1 units for each level-2 unit. Too few intrusions may have reduced the power for detecting important relationships in the present study.

It may difficult to find employees who experience frequent intrusions and engage in frequent unplanned role switching when using a random sampling strategy. Instead, future studies should use intensity sampling to increase the level-1 units (i.e., unplanned role switching episodes), which involves "sampling information-rich cases that manifest the phenomenon of interest intensely" (Miles & Huberman, 1994, p. 28). Taking an intensity sampling approach would require careful consideration of the sample criteria to help ensure that individuals who are most likely to experience work intrusions during their nonwork hours are invited to participate. It is also possible that some participants' conceptualizations of work intrusions were not aligned with my conceptual definition, and therefore they underreported their intrusion episodes. So future studies should

include a verification step to ensure participants understand what an unexpected work intrusion is. For example, participants could be presented with scenarios and asked to indicate whether they consider each example to be an intrusion or not.

My job, organizational, and individual variables as well as the outcome variables in this study were all measured with a self-report survey methodology, which created the potential for common method variance (CMV; Siemsen, 2006). CMV is systematic error variance shared among variables measured with the same method and/or source (Richardson et al., 2009). Researchers have warned that CMV may inflate relationships as, "the method variance components of the individual measures are more positively related than an underlying true relationship" (Doty & Glick, 1998, p. 376). Yet measurement experts have recently argued that CMV is an "urban legend." Indeed, the literature remains inconclusive with respect to whether CMV inflates observed relationships among variables (Crampton & Wagner, 1994; Doty & Glick, 1998; Williams & Brown, 1994). I examined the strength of the relationships between all of the antecedent and outcome variables, as non-significant findings between certain variables (e.g., job flexibility and job insecurity) would indicate that not all variables were related to each other (Brannick, Chan, Conway, Lance, & Spector, 2010). Indeed, my correlation results showed that not all variables were related. I also collected unplanned role switching data on a daily basis from multiple sources (i.e., employee and employee's spouse/partner) and included some other variables (e.g., length of role switching episode) to help make my assessment more concrete and factual (Spector, 2003).

These efforts to rule out CMV do not address the possibility that certain pairs of variables were related because of contamination. Contamination occurs when a third

variable influences the observed relationship between two other variables, such that it affects the measures of the constructs rather than the underlying constructs (Spector & Brannick, 2011). Spector and Brannick described how perceived or experienced stressors may result in over-reporting of negative perceptions and/or internal states. For example, stressors at work, such as an argument with a supervisor, may result in over-reporting of organizational time demands and/or the difficulty of unexpected role switching. To help address contamination I controlled for employees' levels of neuroticism and daily hassles experienced during the daily study period.

Future studies should consider using O*NET to measure certain job characteristics. My outcome variables were also limited to self-reports, and, furthermore, my CFA results suggested negative affect may have partially overlapped with the outcome variables (work-to-nonwork interference, burnout, and physical health symptoms). Future studies should incorporate objective measures of health (e.g., blood pressure at the end of the workweek).

Although I did gather multi-source data for measuring the frequency of work intrusions and unplanned nonwork-to-work role switching episodes each day, it was difficult to gather multi-source data on the more subjective aspects of unplanned role switching, which are more appropriately based on self-reports. For instance, a spouse or partner may not be able to accurately respond to questions about the target employee's mental difficulty with unplanned role switching. Therefore, some of my new measures were limited to self-report data and thus may elicit some common method concerns.

Future studies could perhaps make more use of dyadic analyses by examining the impact of work intrusions and unplanned nonwork-to-work role switching on significant

others and other family members (e.g., children). These types of analyses could demonstrate whether unplanned nonwork-to-work role switching has negative outcomes for others, in addition to the focal employee.

Given the small number of level-1 units (i.e., unplanned role switching episodes), I also had low power when testing predictors of unplanned role switching responses. Future studies should be based on a larger number of unplanned role switching responses to help better understand the triggers of unplanned role switching responses at an episode level. Since intrusion characteristics seem to impact unplanned role switching mental difficulty and physical effort, in addition to some participant characteristics and job characteristics, a person-environment fit model may be useful for predicting unplanned role switching responses.

Nevertheless, despite these limitations, the findings for Study 3 were very important. A repeated measures design using my new episodic measures allowed me to examine discrete work intrusions that may trigger unplanned nonwork-to-work role switching responses. I was also able to examine the causes and consequences of these discrete episodes during a typical work week for employees. Study 3 results also provided evidence that unplanned role switching is a different construct than similar role transitioning constructs from prior research. This research also demonstrated the reliability and multi-dimensionality of my new measures. Given that the predictors and outcomes of mental and physical unplanned role switching difficulty differed, the findings further underscore that unplanned role switching is comprised of distinct physical and psychological processes. I also identified antecedents of unplanned role switching responses and negative outcomes of intrusions and unplanned role switching.

Also, not only did I identify negative outcomes of work intrusions and unplanned role switching, but my findings also help clarify underlying processes, such as how unplanned role switching leads to feelings of WHI. Lastly, the role of intrusions has not been addressed in prior studies. Study 3 results highlighted the critical role of certain intrusion characteristics in employees' role transitioning experiences.

Chapter 6: General Discussion

The present research was designed to achieve four overarching goals: (1.) gaining a better understanding of unplanned nonwork-to-work role switching, (2.) helping to distinguish unplanned role switching from planned role transitions, (3.) developing and refining new measures of unplanned nonwork-to-work role switching, and (4.) testing a nomological net of important variables surrounding the construct. In Study 1, I used the critical incident technique to learn about employees' experiences with unexpected work intrusions during nonwork hours, how and why they responded to intrusions, and how unplanned nonwork-to-work role switching differed from their experiences with planned role transitions during nonwork hours (e.g., bringing work home). The rich qualitative data revealed some of the underlying characteristics of unplanned nonwork-to-work role switching. The qualitative data also helped me develop new episodic measures of unplanned nonwork-to-work role switching. My new measures were further refined based on the feedback from interviewees and subject matter experts that was gathered in Study 2. As a result, the refined scales were used in Study 3 to assess various aspects of an individual's experiences with discrete work intrusions, including responses to intrusions and the mental difficulty and physical effort required to respond.

Study 3 was a repeated measures design, such that I measured employees' experiences with discrete intrusions and their unplanned role switching responses during a ten day daily study period. I assessed the psychometric properties of my new scales first and then used HLM and hierarchical multiple regression analyses to test a nomological net of important variables surrounding the construct. Given that work intrusions and the frequency and difficulty of unplanned role switching were associated with negative consequences for employees, my findings underscored the importance of examining

unplanned role switching. In the following sections I integrate the findings from Study 1 and Study 3, present the theoretical and practical implications of my research, and conclude with the limitations of my research and ideas for future research.

Summary of findings

Given the dearth of prior research on responses to work intrusions during nonwork hours, unplanned role switching was not well understood, and it was not clear whether unplanned role switching was a different process than planned role transitions during nonwork hours. The qualitative results from Study 1 can help work-life researchers gain a better understanding of unplanned nonwork-to-work role switching, the critical aspects of the construct that make it unique from planned role transitioning, and its antecedents and negative consequences. Based on prior theory and research, I began my investigation expecting that individual characteristics and demographic variables would be related to individuals' responses to work intrusions. Also, based on boundary management theory, I predicted that certain job characteristics would trigger responses to intrusions. However, since unexpected work intrusions have not been well examined before the present research, it was not clear whether other factors would be important. Furthermore, prior literature had not addressed the consequences of unplanned role switching in particular, so it was also critical to investigate the potential negative outcomes.

Overall, Study 1 results revealed some of the underlying psychological, emotional, and behavioral processes of unplanned nonwork-to-work role switching, which also helped me identify important aspects that differentiated it from planned role transitions. This has not been done in prior research. My qualitative analysis also helped

me discover other antecedents and other aspects of unplanned role switching to include in Study 3. Moreover, I uncovered several negative outcomes of unplanned role switching for employees, and these outcomes were more negative than those of planned role transitions. I will discuss each of these findings in detail and then will explain how they relate to Study 3 findings in the following sections, beginning with the employee outcomes.

Evidence of negative outcomes for employees further underscored the importance of studying work intrusions and unplanned nonwork-to-work role switching. Study 1 highlighted how planned and unplanned nonwork-to-work role switching affected individuals. Unplanned nonwork-to-work role switching resulted in more feelings of role interference and also more intense negative thoughts and feelings compared to planned role switching. This was a key finding in Study 1 since the consequences of both planned and unplanned role transitioning had not been examined before. My qualitative analysis also indicated that certain types of intrusions and the extent of mental and physical difficulty involved in switching roles led to negative outcomes for employees. Therefore, I tested outcomes of intrusions and various aspects of unplanned role switching in Study 3.

Study 3 showed that not only was responding to work intrusions problematic, but the work intrusions themselves also resulted in some serious negative consequences for employees. Significant relationships with negative affect, WHI, burnout, and poor physical health symptoms suggested that several areas of an individual's life may be negatively impacted by work intrusions and unplanned role switching. For instance, perceived pressure to respond to intrusions was related to negative affect, role switching

mental difficulty was related to WHI, and both intrusion frequency and role switching frequency were related to poor physical health symptoms. Thus, models of unplanned nonwork-to-work role switching should include outcomes of not only unplanned role switching but also outcomes of work intrusions.

In addition to highlighting the importance of examining work intrusions and unplanned role switching, my research also revealed some key underlying characteristics of unplanned role switching, important distinctions between planned and unplanned role switching, and several antecedents of unplanned role switching. First, I found that the context within which unplanned role switching occurred tended to be different than the context for planned role transitions. For planned role switching activities, since participants knew when and where the role transitions would occur, they had the opportunity to arrange their schedules in advance. Consequently, they were typically not involved in important nonwork activities or tasks and were usually alone at the time of the role switch. Conversely, the unplanned nature of role switches in response to work intrusions did not give employees time to plan accordingly, and so they were often involved in some sort of nonwork tasks or activities with family or friends at the time of intrusions.

I also measured context in Study 3, including the timing and location of the intrusions, as well as who was with the individual and the nonwork task/activity in which they were involved at the time. Although Study 1 highlighted the importance of context in distinguishing planned and unplanned role switching experiences, Study 3 findings demonstrated that context was not necessarily important for predicting employees' responses to work intrusions. Due to the small sample size for Study 3, it is possible that

there were not enough different types of intrusion scenarios to thoroughly test for contextual differences.

The findings from Study 1 also suggested that not all work intrusions are alike. The perceived pressure associated with intrusions was critical when predicting whether someone would respond. Kossek and others (1999) called for more attention to external pressures, such as job characteristics, as predictors of boundary strength. Indeed, both internal and external pressures have been cited as reasons an individual might weaken his/her work-nonwork boundaries (e.g., Allen & Hetch, 2009; Kossek et al., 2005). Yet no prior study has examined specific characteristics of work intrusions or jobs as potential antecedents of unplanned role transitioning. Whereas prior research has focused on employees' personal preferences about integration or keeping work and nonwork roles segmented (e.g., Bulger et al., 2007; Kreiner, 2006), the Study 1 findings implied that perceived external pressures may influence individuals to unexpectedly switch roles in response to work intrusions regardless of their preferences for integrating or segmenting their work and nonwork domains. Study 1 results also showed that the perceived importance of an intrusion was related to the difficulty of responding as well as how individuals felt following an intrusion.

Thus, in addition to measuring job and individual antecedents of unplanned role switching, Study 1 suggested that the characteristics of intrusions were critical to assess in Study 3. Indeed, Study 3 results highlighted that intrusion characteristics may be important factors in individuals' unplanned role switching experiences. In particular, intrusion pressure was related to the mental difficulty of the role switching response and how much physical effort the response required. Also, the perceived significance of an

intrusion was related to unplanned role switching physical effort. Perhaps when an individual feels pressure to respond or perceives a work issue as important, this prompts feelings of organization-based self-esteem (Bowling, 2010), such that s/he feels needed in the workplace. Individuals may also feel that these types of intrusions are justified or legitimate (Semner, 2007), and therefore are willing to expend resources to address them, as opposed to more trivial or unnecessary work matters.

The qualitative data from Study 1 suggested that the unplanned use of personal resources was a unique underlying condition of employees' unplanned role switching experiences that distinguished them from planned role transitions. The ability to foresee when a role switch will occur, as is the case for planned transitions, may give individuals a chance to mentally and physically prepare for the shift to work tasks/activities during certain nonwork hours. This sense of control seemed to reduce feelings of disruption during personal time. However, the unplanned nature of role switches that occurred in response to unexpected work intrusions gave employees little opportunity to prepare. Instead, they had to quickly decide whether to abruptly shift their resources from their current nonwork tasks/activities to the work tasks, thereby leading to unexpected physical exertion and feelings of mental disruption. Since individuals tended to be involved in nonwork tasks/activities with their family or friends at the time of intrusions, the intrusions and employees' responses were described as far more intrusive and disruptive than the planned role transitions that were scheduled in advance.

Hence, I developed measures of unplanned role switching mental and physical difficulty, which have not been measured before. If I had not conducted the qualitative analysis, I would not have created these measures or gained insights about these aspects

of unplanned role switching and their effects on employees. In Study 3, mental difficulty and physical effort proved to be important aspects of unplanned role switching, as they were related to intrusion characteristics (e.g., intrusion pressure) and certain job and individual characteristics (e.g., work role overload and work role identification).

Empirical contributions

There has been a call for more sophisticated measures of work-life constructs (Casper et al., 2007; Eby et al., 2005). Thus, two important empirical contributions of the present research were: (1.) the development of episodic measures of work intrusions and unplanned nonwork-to-work role switching and (2.) designing and conducting a repeated measures study with these new measures. As Maertz and Boyar (2011) discussed, a levels approach is not always appropriate for studying conflict between work and nonwork roles, particularly if the researcher is interested in examining instances of conflict that begin at specific times and places and are addressed in the short-term. My episodic measures can be used to assess how employees respond to various intrusion incidents that may occur throughout the day or week. Also, a levels approach may be imprecise, as data are based on consolidated past episodes of conflict (Williams & Alliger, 1994), rather than discrete episodes. By measuring specific instances of work intrusions rather than consolidated past intrusions, my episodic measures allow researchers to examine how the conditions or characteristics of a particular intrusion may influence how an employee responds and the immediate outcomes of the incident. Furthermore, my episodic measures are more precise than other role transitioning measures since the data are not based on consolidated past intrusions, but instead on discrete episodes. Consolidated measures would not have given the necessary insights into employees' experiences with

various discrete work intrusions that I gained from an episodic approach. My episodic approach also helped reduce the chance that a memory of a past intrusion was confounded with a memory of another past intrusion. Lastly, my new measures can be administered on a daily basis, allowing for repeated measurement.

Another empirical contribution of my research was using multi-source data for my measures of work intrusion frequency and unplanned nonwork-to-work role switching responses, which helped address common method concerns. With multi-source data I was able to assess the accuracy of the self-reported frequency of intrusions and unplanned role switching responses. As a result, I removed data for four dyads (5% of the sample) that seemed inaccurate (i.e., frequency ratings of the target employee and the significant other that did not converge). This approach helped strengthen my research conclusions and increased confidence in the reliability of my frequency data. Also, my new dyadic measures can be used to conduct dyadic research at the episode level, such as examining the impact of discrete work intrusions and unplanned role switching on significant others.

The relationships I found between unplanned nonwork-to-work role switching and employee outcomes also make some important empirical contributions. The impact of specific role transitioning episodes on employee's health or affect has not been examined. With my episodic measures, I was able to show how specific types of intrusions and the difficulty of various role transitioning episodes throughout a one week period were negatively related to individuals' affect and health. Prior studies have mainly focused on the relationships between role transitioning tendencies and employee outcomes. For example, Matthews et al. (2010) examined the relationship between role

transitioning and work-family conflict. Their role transitioning measure asked employees to report on the typical number of times they transition from family roles to work roles, with response options ranging from "never" to "five or more days per week." By asking employees to report on specific intrusions each day, I was able to show how specific experiences with work intrusions throughout the workweek were associated with negative outcomes for employees.

Theoretical implications

The present research contributes to and extends prior boundary theories and role transitioning models. It is well known that a lack of psychological detachment from work during nonwork hours can be problematic for employees (e.g., Sonnentag, Kuttler, & Fritz, 2010). However, the distinction between planned transitions to work during nonwork hours (e.g., bringing work home) and unplanned attachment to work during nonwork hours (e.g., responding to unexpected work intrusions) had not been addressed. Until now, it was not clear whether unplanned role transitioning had unique characteristics that differentiated it from planned role transiting. Additionally, it was unclear whether the antecedents and outcomes of planned and unplanned role transitioning behaviors differed. Also, only one aspect, i.e., frequency of role transitioning, had been examined in prior studies (e.g., Bulger et al., 2007; Matthews et al. 2010). So the present findings have added to our understanding about the multiple dimensions of unplanned role transitioning and their relationships with various antecedents and employee consequences. The ways in which the present studies have addressed these theoretical gaps are discussed next.

Study 1 findings extend boundary theories and role transitioning models by showing some clear distinctions in the characteristics of planned and unplanned role switching, with the predictability of the experience being most critical. Based on the qualitative results, I found that in contrast to planned role transitions, two unique aspects of unplanned nonwork-to-work role switching were the unpredictable nature of the episodes and the extent of disruption to personal time. These findings extend boundary management theory. The ability to foresee when a role transition will occur gives an individual a chance to mentally prepare for switching to the work role during certain nonwork hours. However, the unplanned nature of role switches that occur in response to work intrusions gives individuals little time to decide how they will maintain their work-nonwork boundaries during their personal time. Instead, they are forced to make a quick decision about whether to abruptly transition from nonwork roles to the work role to address work demands, which seemingly may also result in feelings of disruption or distraction, which may potentially lead to feelings of negative affect. Prior research based on boundary management theory has not addressed unpredictability as a factor that varies across role transitioning experiences, depending on whether the transition is triggered by an unexpected work intrusion or not. Although the frequency of unplanned nonwork-to-work role switching responses is important, it is the inherent unpredictability of the experience itself that distinguishes it from planned transitions during nonwork hours.

Although the difficulty of role transitions had been discussed (Ashforth et al., 2000), the present study is the first to empirically examine the mental and physical difficulty of unplanned nonwork-to-work role switching. Consequently, it was not clear until now that the difficulty of role transitioning is important and that its antecedents and

outcomes differ from those of role transitioning frequency. Thus, Study 1 extends boundary management theory by revealing that not only did the frequency of unplanned role switching matter when individuals described their unplanned role switching experiences, but the mental and physical difficulty of switching roles did also. Thus, another unique underlying condition that emerged from my research was the importance of the mental difficulty and physical effort involved when switching roles in response to work intrusions. Study 3 findings also showed that the antecedents and outcomes of unplanned role switching difficulty differed from those of role switching frequency. Furthermore, the antecedents and outcomes differed for mental and physical role switching difficulty. These results expand boundary management theory by suggesting that both of these two distinct aspects of unplanned role transitioning should be taken into consideration when trying to understand these experiences and when trying to determine the causes and consequences of role switching episodes.

It was also important to determine whether the antecedents of planned and unplanned role switching differ. It is well known that individual characteristics (e.g., role identification, integration boundary management strategy) are related to how one prefers to maintain their work and nonwork boundaries, and thus should be related to how individuals respond to work intrusions, (Ashforth et al., 2000; Hecht & Allen, 2009; Rothbard et al., 2005). Relatedly, certain personality traits (e.g. conscientiousness, OBSE) that are related to individuals' boundary management preferences were expected to be related to how individuals respond to intrusions (e.g., Bowling et al., 2010; Lodi-Smith & Roberts, 2007). Additionally, prior research has suggested that certain individual differences that are related to how one maintains work-nonwork boundaries may be

factors in responding to work intrusions, such as gender (Rothbard et al., 2005; Winkel & Clayton, 2009) and tenure (Olson-Buchanan & Boswell, 2006). However, Kossek and others (1999) called for attention to other factors beyond the individual that may be related to boundary management, as boundary management strategies are shaped by not only individual differences but also job or organizational characteristics (Kossek et al., 2005).

Aligned with Barnett's (1998) suggestion to take a holistic view of boundary management, I examined not only individual characteristics, but also job characteristics as antecedents of unplanned nonwork-to-work role switching. Furthermore, I included situational factors as potential antecedents, such as intrusion characteristics. Indeed, my findings indicated that several factors in addition to individual characteristics should be included in models of work intrusions and unplanned role transitioning. These factors are discussed next.

First, Study 1 results highlighted the importance of context which extends boundary theory (Zerubavel, 1991, 1996) and boundary management theory (Ashforth et al., 2000). Boundaries relate to the timing and location of intrusions. Temporal boundaries define when a role should be performed, and psychological boundaries dictate when thinking patterns, behavior patterns, and emotions are appropriate for one domain but not the other. These boundaries seem to differ depending on whether a role transition is planned or unplanned. Planned role switching gives individuals more control over setting their temporal and psychological boundaries in advance of the transition. Individuals' ability to actively schedule their work and nonwork activities in advance seems important, such that it allows them to plan ahead and possibly prevent feelings of

interruption during their personal time with others. Conversely, when unexpected work intrusions occur, individuals are forced to quickly decide whether to unexpectedly loosen their temporal and psychological boundaries in order to respond to intrusions while involved in personal activities, possibly while with others. Thus, an individual's preferred boundary management strategies may be overridden by situational factors.

The findings from Study 1 about the determinants of unplanned role switching suggested that the perceived pressure to respond to work intrusions and the perceived importance of intrusions are both critical for predicting whether someone will respond. Flexibility enactment theory (Kossek et al., 2005) posits that boundary management strategies are shaped by the structure of a job or an organization, in addition to individual characteristics. However, prior to the present study, this theory had not been fully tested, such that external factors have not been examined as causal conditions for unplanned role transitions. My findings implied that even though employees may prefer to segment their work and nonwork roles, work intrusions that they perceive as important apparently influence them to weaken their nonwork borders and engage in unplanned role transitions. Study 3 further extended flexibility enactment theory (Kossek et al., 2005) by showing that intrusion characteristics were not only important for predicting whether individuals will respond to intrusions by loosening nonwork boundaries, but how difficult and physical draining it may be for employees to do so. These findings also expand boundary management theory by highlighting the importance of the specific types of intrusions that precede unplanned role switching episodes. Future role transitioning models should incorporate these additional variables.

The difference between planned and unplanned role switching was further highlighted by the differences in their negative outcomes for employees, with Study 1 showing the outcomes as more negative for unplanned transitions than planned transitions. The specific negative outcomes of unplanned nonwork-to-work role switching revealed in Study 1 are not only consistent with role strain theory, the resource drain model, and the effort-recovery model, but extend these models as well. Given that role strain is defined as the felt difficulty in fulfilling role obligations (Goode, 1960), it is surprising that the mental difficulty of role transitioning has not been examined as a potential antecedent of work-to-nonwork interference (WHI). Prior work-life studies have found that many individual, job, and organizational characteristics are predictors of WHI. In particular, a lack of psychological detachment from work during nonwork hours (Etzion et al., 1998; Meijman & Mulder, 1998; Sonnentag & Bayer, 2005) and work permeations in the nonwork domain (e.g., receiving job contacts) have been linked with WHI (Bulger et al. 2007; Clark, 2002; Hetch & Allen, 2009; Olson-Buchanan & Boswell, 2006; Voydanoff, 2005a; 2005b). However, these studies focused only on the frequency of work permeations and the extent of psychological detachment, but did not clarify the process of how individuals respond to unexpected work intrusions.

In the present research, however, findings indicated that the unexpected use of personal resources during nonwork hours may engender negative thoughts and feelings, including feelings of conflict between work and nonwork roles. More specifically, in Study 3, I found that the mental difficulty associated with unplanned role switching was a predictor of WHI. These findings are consistent with role strain theory and the resource drain model and can be used to extend work-life theory related to role transitions by

identifying some of the underlying processes that lead from work demands to feelings of WHI. Rather than being impacted by the mere frequency of intrusions or unplanned role switching episodes, WHI seems to be exacerbated by mentally challenging role switching episodes. The resource drain model posits that feelings of strain may stem from lacking the resources to meet the demands of multiple roles (Edwards & Rothbard, 2000). The more psychologically challenging an unplanned role switching episode is, the more personal resources (e.g., time, attention, and energy) an individual must expend in the work role, leaving fewer resources available for nonwork roles. To better understand which resources are most useful in this process, future studies should further examine the mental effort required to unexpectedly engage in the work role during nonwork hours. Perhaps the use of one's time when switching to the work role during nonwork hours is not problematic unless the role switching experience is difficult such that it requires expending significant energy or attention.

My research showed how the extent of mental distraction and disruption from specific work intrusions throughout a work week may be an underlying mechanism that leads to feelings of WHI during that same week. Thus, even short periods of conflict between work and nonwork roles can be detrimental for employees when the episodes are psychologically challenging. So even though frequent unplanned role switching episodes may not expend an individual's personal resources, the use of personal resources intermittently for brief periods of time may be problematic if the unplanned role switching episodes are psychologically difficult. Although time may be drained when attending to the work role during nonwork hours, the use of physical energy and mental attention may be even more problematic. Therefore, it is critical to consider not only the

frequency of unplanned role transitions, but also the mental and physical difficulty of the experiences in order to better understand why employees may feel that work is interfering+ with nonwork roles as a result of intrusions.

The findings for burnout extend the resource drain hypothesis (Edwards & Rothbard, 2000) by identifying some of the underlying processes that may link work demands with feelings of burnout. Interestingly, burnout was affected neither by the frequency nor the mental and physical difficulty of unplanned role switching, which is not consistent with the effort-recovery model. Instead, my findings implies that it is not the extent of unplanned involvement in the work role during nonwork hours that impacts burnout, but the underlying reasons someone decides to engage in the work role. In particular, if an intrusion is perceived as important, then burnout does not seem to be an issue. Perhaps when personal resources are expended to attend to important work matters, individuals feel that the use of those resources is warranted and therefore they do not feel as emotionally exhausted or disengaged about their work compared to when they must use finite resources to attend to more trivial work matters.

This notable finding for burnout shows that work intrusion characteristics and the feelings that intrusions engender in individuals may be important components in models of unplanned nonwork-to-work role switching. In contrast, individual characteristics such as work role identification and organizational-based self-esteem (OBSE) do not seem to be factors that predict unplanned role switching. However, there may be specific types of intrusions, such as a work issue requiring someone's help, that may evoke temporary feelings of self-worth or identification with the work role (Bowling, 2010), which then lead to positive perceptions of the situation and thus less negative outcomes for the

individual. So the present findings suggest that the reasons for expending personal resources may be a critical aspect that should be incorporated into both role stress theory and the resource drain model. Also, a situational approach to studying unplanned nonwork-to-work role switching is necessary. Future studies should take into consideration the underlying reasons why individuals are expending their personal resources in one role in favor of another. Well-justified use of resources (e.g., to attend to an important work matter) may not be as troublesome for individuals compared to when they are bothered during their personal time to address work tasks that are perceived to be less important.

The findings for physical health symptoms also extend the effort-recovery model. Both intrusion frequency and unplanned role switching frequency were predictive of poor health symptoms among employees. This finding was consistent with the effort-recovery model, which posits that prolonged insufficient recovery from work demands over an extended period of time may lead to serious physical health risks (von Thiele et al., 2006). My finding also extends the effort-recovery model by showing that multiple work intrusions and unplanned role switching episodes during a work week may prevent psychological detachment from the work role and negatively impact an individual's physical health. Even short durations of effort in the work role during nonwork hours may have negative implications for an individual's health, particularly if the episodes are frequent throughout nonwork hours. So even though some intrusions and unplanned role switching episodes may not be difficult for an individual, the frequency of interruptions during one's personal time and the frequency of responding to the intrusions matter. Although other findings suggested that the individual may not feel burnt out or feel that

work is interfering with nonwork roles, the number of intrusions and unplanned role switches still had negative implications for physical health. The potential for a negative impact on physical health underscores the importance of studying unplanned nonwork-to-work role switching. Given the potential for negative consequences, such as WHI, the present research highlights the importance of studying unplanned role switching.

Practical implications

The findings from the present research demonstrate how work intrusions and unplanned nonwork-to-work role switching may have negative consequences for workers, including work-to-nonwork conflict, job burnout, poor physical health, and negative affect. These negative outcomes that result from a lack of detachment from work during nonwork hours may in turn negatively affect some critical organizational outcomes, such as employees' job performance or organizational commitment (e.g., Andreassen et al., 2010; Bakker et al., 2004; Fritz & Sonnentag, 2006; Sonnentag, Kuttler, et al., 2010). Thus, employers should be aware of the prevalence of work intrusions and unplanned role switching behavior among employees and should also understand the causes and consequences of these experiences. A key contribution of the present study is the development of an episodic work-life measure that can be administered in organizations to help practitioners understand the prevalence of work intrusions among their employees, the reasons why employees may feel pressure to respond to intrusions, and the negative impact of their responses. This data may help practitioners educate managers and employees about the triggers of unplanned nonwork-to-work role switching as well as the consequences.

Employee training and education should address the potential negative impact of unplanned role switching on employees' personal lives and health. For instance, employers and managers should understand that difficult unplanned role switching episodes throughout the workweek may deplete employees' mental (e.g., concentration) and physical (e.g., energy) resources and negatively impact their affect. The impact on affect is important, as prior research has shown a link between affect at home and affect at work the next day (Williams & Brown, 1994), as well as the intensity of focus at work the next day (Judge et al., 2006; Rothbard, 2001). Employers and managers should also understand that resource depletion may increase negative health symptoms among employees which could eventually lead to serious health problems. Health issues could in turn impact employees' absenteeism at work.

Once employers and employees are educated on the consequences of unexpected work intrusions and unplanned role transitions during nonwork time, the next step is to help them understand the triggers of these experiences. The present study showed that it is not just individual preferences that play a role, but also aspects of the job and the intrusions that prompt responses to work intrusions. Practitioners, managers, and employees may not be able to change individual characteristics or mold job characteristics, but they might be able to influence situational factors, such as the frequency and the nature of intrusions. Perceived pressure to respond to intrusions was indeed related to whether an individual actually responded and was also associated with the felt mental and physical difficulty in responding. Also, the frequency of intrusions and unplanned role switching were both related to employees' physical health. To help reduce the frequency of intrusions practitioners should partner with leaders and managers

to develop organizational policies regarding what types of intrusions are acceptable and when.

Broad organizational policies may not always be practical, as employees in certain jobs may not be able to disconnect at the same time, such as those working with global clients. Instead, managers and employees could agree on appropriate times for contact or correspondence during nonwork hours or nonwork days. For instance, managers could propose a rotating schedule among team members, such that employees rotate their availability during nonwork hours and nonwork days. This type of arrangement would make employees' schedules more predictable, allowing them to mentally prepare for work intrusions. Furthermore, having scheduled periods of time without any interruptions would give employees a sense of control over their personal time and opportunities to recover from their work demands.

These collaborative scheduling strategies have been proven beneficial. For example, in *Sleeping with Your Smartphone* (Perlow, 2012), Perlow showed the benefits of disconnecting strategies set by work teams that were embedded within demanding jobs at a consulting firm. Teams that designated different nonwork hours for each team member to entirely disconnect from work were more productive and the employees were more satisfied with their sense of balance between work and personal life roles. Furthermore, this change in the way work was getting accomplished positively impacted recruitment and employee retention for the company.

The perceived importance of intrusions was related to whether an individual responded to an intrusion and to role switching mental and physical difficulty. Employers do have some control over the types of intrusions that employees confront. All

employees, including managers and supervisors, should be educated on how to distinguish between unnecessary and truly important work matters. Moreover, they should understand how work intrusions perceived as unnecessary may have negative consequences for employees, i.e., feelings of burnout.

Based on Semmer and colleagues research on illegitimate tasks (Semmer et al., 2010), when an employee is asked to perform a work task that s/he considers to be incompatible with his/her work role, the work task may be perceived as a stressor (Semmer et al., 2007), and this may be compounded when the task must be done during nonwork time. Unnecessary work tasks during one's personal time could be considered not only as counterproductive to the employee's job performance, but may also lead to feelings of job burnout. Therefore, one area that training and education should focus on is clarifying for managers each of their employee's roles within the organization and which tasks their employees are expected to do and *not* do. Unfortunately, some managers and supervisors may expect a response to every request during nonwork hours, even if it is a frivolous task from the employee's perspective. So training should also be designed to support employees who work with demanding managers/supervisors. It is critical to help prevent feelings of burnout, as emotional exhaustion has been linked with negative outcomes for employees (e.g., psychosomatic complaints) and for organizations (e.g., lower work engagement; Sonnentag, Binnewies, et al., 2010).

Even if managers are trained and educated, employees may still feel that they do not have much control over work intrusions. So employee-focused training should concentrate on the various types of recovery experiences that may help employees combat the negative impact of intrusions and unplanned role switching. Additional

support should be provided to employees and managers who tend to experience work intrusions or work in demanding jobs. Wellness programs could provide these employees with advice on how to start conversations with their managers on this issue. Programs could also provide guidance on how to relax and psychologically detach from the work role during their personal time, and could also educate them on the benefits of mastering nonwork-related skills during their personal time. Hahn and colleagues evaluated the effectiveness of a recovery training program on employees' recovery experiences (Hahn, Binnewies, Sonnentag, & Mojza, 2011). They found that the training program benefited employees in several ways, including an increase in perceptions of control over recovery experiences, better sleep quality, less perceived stress, and less negative affect. In summary, it is critical to reduce the frequency and difficulty of unplanned role switching during nonwork hours, as a lack of recovery during nonwork hours may not only negatively impact employees' personal lives and health, but may also negatively affect their task performance, personal initiative, organizational citizenship behavior, and effort levels at work (Binnewies, Sonnentag, & Mojza, 2009).

Limitations and suggestions for future research

Further exploration of work intrusions and unplanned role switching is needed. Study 1 highlighted some notable differences between planned and unplanned role switching in terms of how the characteristics of these two types of role transitions differ as well as how the antecedents and consequences of each differ. However, the qualitative findings were based on a small sample, and there were methodological limitations as well, including the use of convenience sampling, reliance on telephone interviews, and single source data. More interviews could help verify that the content domain of work

intrusions and unplanned nonwork-to-work role switching has been adequately covered. A random sampling technique can help reduce the potential for any interviewee biases or other threats to validity. In-person interviews, which are more personal, could help in gathering more detailed examples of work intrusion episodes. Furthermore, gathering qualitative data from the employees' spouses or partners may help to better understand how unplanned role switching experiences impact significant others.

Study 3 helped identify some triggers of individuals' response to work intrusions and also demonstrated the importance of examining work intrusions and unplanned role switching by revealing negative outcomes for employees. Yet the 10-day duration of Study 3 was problematic, as the time commitment made it difficult to gather data from a large sample of employees. There is also the possibility that 10 days is not an adequate representation of a typical workweek for employees. Future research should ask participants whether the workweek was typical for them. For example, they could indicate whether their workweek was more demanding than usual.

Budgetary constraints did not allow for extending the study period, which would have helped in gathering a larger number of work intrusion episodes. To increase the power for detecting important relationships, future studies should use intensity sampling to increase the number of work intrusion episodes that can be examined with my new measures, as discussed in the discussion section for Study 3 in Chapter 5. By gathering more work intrusion episodes, future research can explore whether there is a threshold in terms of the number of intrusions an individual experience during a workweek. Perhaps intrusions are not problematic but instead are productive up to a certain point. For instance, individuals with demanding jobs may find that a certain number of work

intrusions during their nonwork time helps them stay on track with their deliverables, but then there is a breaking point when the intrusions become too excessive and begin to have a negative impact on psychological and physical health.

Study 3 was based entirely on self-report data. For future research, O*NET data can be incorporated to measure job characteristics, such as job complexity. Also, objective measures of health should be incorporated, such as measures of blood pressure.

Using my newly developed episodic measures, future research should expand on how various types of intrusions may be perceived to differ in importance (e.g., intrusions from a boss or requests for help). My research helped to clarify the underlying mechanism for the relationships between perceived intrusion significance and other variables (e.g., burnout). For example, feelings of self-worth in the work role might be associated with perceptions of how important intrusions are. Thus, future research should examine whether OBSE plays a role in the relationships between intrusion significance and unplanned role switching difficulty, and between intrusion significance and burnout. OBSE should be measured as a state rather than a trait to help determine whether certain situations elicit feelings of self-worth at work which in turn trigger unplanned role switching responses.

In addition to the intrusion characteristics examined in the present research, the perception of the intrusion as negative or positive may be a factor in whether someone responds and the impact on the individual. The valence of the intrusion may affect how the individual felt about transitioning to the work task during nonwork time which may lead to either more or less burnout. For instance, if the individual perceived the intrusion in a positive manner, such that it was good news, then s/he may enjoy responding to it

and therefore may not report burnout. Additionally, future research should go beyond simply identifying the source of the intrusion by taking examining the nature of the relationship between the intruder and the focal employee. For example, if the employee has a good relationship with his/her manager, intrusions from the manager may not be perceived as negatively compared to someone who has a poor relationship with his/her manager.

Future studies should also explore the effects of personal resource depletion associated with engaging in unplanned roles switching. Responses to work intrusions require an individual to use finite personal resources, such as time or attention, which can have a negative impact on health. Interestingly, my research findings implied that the depletion of certain types of resources (e.g., physical energy, mental attention) may matter more than others (e.g., time). Thus, it is imperative that researchers clarify these issues, for example, by investigating both the types and quantity of their resources individuals are willing to expend when responding to intrusions. In particular, future studies should examine the relative importance of an individual's various personal resources in decisions about how to respond to work intrusions.

Given the critical role of personal resources, future studies should examine whether recovery experiences can help restore resources during nonwork time. Recovery experiences such as relaxation, meditation, or exercise might serve as buffers when individuals must respond to work intrusions during their personal time. The findings could further promote the benefits of psychological detachment from work during nonwork hours and the benefits of recovery experiences during nonwork hours.

Additionally, this research could be used to design recovery training programs for employees, particularly those working in demanding jobs.

To further underscore the importance of examining unplanned role switching, future research should examine work-related outcome variables, such as work engagement, organizational commitment, or performance ratings. Work engagement and organizational commitment could be examined through self-report methods and findings may highlight whether unplanned role switching is negatively related to discretionary effort at work or organizational commitment. Performance ratings data could be used to explore whether unplanned role switching has any long-term negative impact on employees' performance at work.

Overall, the present research helped identify several important antecedents and outcomes of the different aspects of unplanned nonwork-to-work role switching. More research needs to be conducted with larger samples of unplanned role switching episodes so that more complex relationships can be examined, more sophisticated models of unplanned nonwork-to-work role switching can be developed, and more evidence of the negative outcomes of this behavior for employees and employers can be collected.

Research conclusions

The present research revealed some very important findings that make several empirical and theoretical contributions to work-life research. In Study 1, I uncovered new information about the underlying processes of unplanned role switching, which provided insights into an important phenomenon that has not been well understood previously in the role transitioning literature. This qualitative analysis helped to clarify and ensure coverage of the conceptual domain of unplanned nonwork-to-work role switching and

distinguished it from planned role transitioning by identifying some unique characteristics (e.g., unpredictability). The findings from Study 1 and Study 2 were critical in the development and refinement of new measures of work intrusions and unplanned nonwork-to-work role switching episodes.

Study 3 results were very important as well. With a repeated measures design that incorporated my new episodic measures, I examined employees' responses to discrete work intrusions during their nonwork hours. The results demonstrated the reliability and multi-dimensionality of my new measures and also indicated that unplanned role switching is a different construct than what were perhaps thought to be similar role transitioning constructs in prior research. I also found that unplanned role switching has distinct physical and psychological processes, as the antecedents and outcomes differed for unplanned role switching mental and physical difficulty. The negatives consequences of unplanned role switching is critical from a practical perspective, as employers and practitioners can now be made aware of the negative impact on employees' lives. Also, not only did I find that there were negative outcomes for employees, but my findings also help explain how intrusions and unplanned role switching leads to these negative outcomes, which extends role strain theory, the resource drain model, and the effort-recovery model. Lastly, my episodic approach permitted me to examine the critical role of intrusion characteristics in employees' role transitioning experiences, and these findings extend boundary theories and the role transitioning literature since discrete work intrusions and responses to them have not been examined before.

In sum, my research has made several empirical, theoretical, and practical implications to the work-life literature and to the role transitioning literature specifically.

Moreover, these findings have also illuminated the future research needed in order to further researchers' understanding of work intrusions and unplanned nonwork-to-work role switching. In light of the serious consequences for employees when work intrudes into their personal lives, further exploration of these issues will be important for organizations and for employees' quality of life.

Table 1a

Code Frequencies for Unplanned Nonwork-to-Work Role Switching Components, Themes, and Codes

Component	Theme	Code	Code Frequency
Intrusion Context	Timing of Work Intrusion	Weekend	6
		Vacation day	5
		Late evening/early morning	2
	Current Nonwork Activity	Recent transition to nonwork role	2
		Leisure activity	6
		Nonwork tasks	5
		Family event	2
		Bed time	1
		Sleeping	1
	Who is Present	Significant other	6
		Family	5
	Significant Work Events	Problematic client	2
		Emergency	2
		Important business deal/client	2
		Workload	3
	Significant Nonwork Events	Children misbehaving	1
		Important personal appointment	2
Causal Conditions of Role Switching	Type of Primary Intrusion	Behavioral	16
		Psychological	3
	Type of Technology Used	Computer	2
		Telephone/Smartphone	14

Component	Theme	Code	Code Frequency
	Details of Intrusion	Complaint from client	1
		Business problem	6
		Delayed work	2
		Schedule conflict	4
		Demand	4
		Other needed help	4
	Interactions during Intrusion	Client/customer	2
	Details of Psychological Intrusion	Rumination	2
		Mental preparation	2
Causal (Intrusion) Characteristics	Frequency of Interruption	Never	2
		Very rare	11
		Infrequent	4
	Reason for Urgency	Customer service	2
		Source of intrusion	8
		Large revenue	4
		Impacted work schedule	5
		No else available	5
	Why it was Unexpected	No warning	11
		Rare/infrequent event	11
	Why it was Expected	Prior conversation/warnings	2
	Reason it was Disruptive/Intrusive	Mental disruption	17
		Thought it was emergency	4
	Thoughts/feelings during Intrusion	Positive/neutral Thoughts	4
		Negative Thoughts	17
	Others Thoughts/Feelings or Mood during Intrusion	Positive/neutral Feelings or Mood	3

Component	Theme	Code	Code Frequency
		Negative Feelings or Mood	8
Phenomenon Characteristics (Unplanned Nonwork-to-Work Role Switching)	Type of Primary Role Switch	Behavioral	16
		Psychological	2
	Negative Reason for Role Switch	Pressure from others	9
		Pressure from self	13
		Pressure from significant other	1
		Job insecurity	1
		No choice	7
	Neutral/Positive Reason for Role Switch	Expectations	12
		Job description	6
		Dependence	11
		Relationship maintenance	7
		Job performance	4
		Be prepared	5
		Automatic reaction	7
	Primary Role Switching Behavior	Listen to voicemail	1
		Provide help	2
		Understand problem	5
	Behavioral Duration	Few minutes	15
		Few hours	1
	Primary Role Switching Thoughts	Mental prepping	1
		Few hours	3
	Immediate Behavioral Follow-Up	Call someone	6
		Email someone	8
		Gather information	8

Component	Theme	Code	Code Frequency
		Go home	3
		Travel to work	2
		Make travel plans	3
		Set reminder	1
	Duration of Behavioral Follow-Up	Few minutes	2
		About an hour	8
		Few hours	4
	Immediate Mental Follow-Up	Mental preparation	8
		Thinking about work	7
	Duration of Mental Follow-Up	Rest of day	8
		All weekend	3
		Few days	2
Underlying Conditions of Unplanned Nonwork-to-Work Role Switching	Reason it was Disruptive	Disrupted/interrupted personal time/activity	14
		Bad timing	9
		Mentally distracted during personal/family time	7
		Negatively impacted rest of day	11
	Reason it was not Disruptive	Quick task	1
	Reason it was Difficult	Bad timing	8
		Distracted	8
		Mental switch	11
		Required multiple switches	4
		Mental drain	9
		Required memory/work knowledge	1

Component	Theme	Code	Code Frequency
	Reason it was Not Difficult	Easy task	1
	Thoughts during Role Switch	Negative	17
Outcomes of Unplanned Nonwork-to-Work Role Switching	Immediate Outcome of Situation	Positive/neutral	6
		Negative	4
	Thoughts Afterward	Positive/neutral	5
		Negative	17
	Feelings or Mood Afterward	Positive/neutral	4
		Negative	16
	Others Thoughts/ Feelings or Mood Afterward	Positive/neutral	6
		Negative	9
	Short-Term Impact on Others	Positive/neutral	5
		Negative	10
	Long-Term Impact	Long-term follow-up	9
		Positive/neutral	4
		Negative	8
	Long-Term Impact on Others	Positive/neutral	3
		Negative	4
	Final Outcome of Work Situation	Positive/neutral	8
		Negative	3

Note. "Number of cases code is present" indicates the number of unplanned nonwork-to-work role switching episodes for which a code was present. A total of 18 unplanned nonwork-to-work role switching episodes were coded.

Table 1b

Mean Ratings for Unplanned Nonwork-to-Work Role Switching Components, Themes, and Codes

Component	Theme	Code	n	Mean
Causal (Intrusion) Characteristics	Extent of Urgency	1 = not all urgent to 7 = extremely urgent	18	6.11
	Extent Intrusion Was Unexpected	1 = not all unexpected to 7 = extremely unexpected	18	5.72
Underlying Conditions of Unplanned Nonwork-to-Work Role Switching	Extent of Disruption	1 = not all disruptive to 7 = extremely disruptive	18	5.78
	Extent of Disruption	1 = not all disruptive to 7 = extremely disruptive	18	5.39
	Extent of Difficulty	1 = not at all difficult to 7 = extremely difficulty	18	4.94

Note. The mean is based on ratings for 18 unplanned nonwork-to-work role switching episodes.

Table 2

Work Intrusion and Unplanned Nonwork-to-Work Role Switching Themes, Codes, and Examples

Theme	Code	Example from Interview
Timing of work intrusion	Weekend	*It was a Saturday and I was running errands (alone). I was enjoying my time alone. An email didn't go out at 3pm…I found out about it at 4:30pm. It was the one time I didn't check.*
	Vacation day	*I can't believe I haven't thought of this, three weeks ago, I was supposed to be off, I was supposed to have a [paid time off].*
	Late evening/early morning	*One in the morning on a weekday.*
Current nonwork activity	Recent transition to nonwork role	*I was walking in the door with my Target bags, I mean my CVS bags cause I went shopping at CVS, then I'm putting them down and as soon as I walked into my room, the phone starts ringing. I didn't get to put my bag down when the phone starts ringing.*
	Leisure activity	*We had an upset customer that ended up calling me directly yesterday, complaining to me at 7 o'clock at night and I was spending time with my girlfriend in the pool, and we're just relaxing…*
	Nonwork tasks	*I was preparing dinner and go to my personal stuff.*
	Family event	*Nothing ever really happens but a few weekends ago it was my weekend and on Sunday we were at a family event, and I got a call from my boss saying that it was an emergency at work…*
	Bed time	*It was a hard Monday and then harder evening that I had to deal with this situation. It was right before bed. I was getting ready for bed.*
	Sleeping	*One in the morning on a weekday.*
Who is present	Significant other	*I live with my boyfriend but I don't think he woke up. He has a different schedule. He works from 7 to 3:30. He wakes up at 5 in the morning. I tried to be at least disruptive as possible but I'm sure he heard me.*

Theme	Code	Example from Interview
	Family	*My children were acting up. They were misbehaving. My husband was not home yet, I was about to call him to come home, when I saw the voicemail from my boss about the professor leaving.*
Significant work events	Problematic client	*I was working on a particular client that you know, already been a very difficult case, and we are trying to transfer them from one entity to the next and it seems to be very difficult because of the way that his existing account was sorta set up.*
	Emergency	*Oh just a typical Sunday, but just being in the air conditioning business, coming off days of 100 plus degree weather, the air conditioning systems would go down.*
	Important business deal/client	*I mean it's a multimillion dollar deal which is not only good for our business but for your parent company. It's a lot of money for their business as well.*
	Workload	*It was a hectic day because we were going to be out of the office on Friday to do community service. We had a divine head office team in Amsterdam so everyone was rushing to get through.*
Significant nonwork events	Children misbehaving	*Personally my children were acting up. They were misbehaving.*
	Important personal appointment	*It intruded on a very important personal time. Cause you know, had there not been a final, had there not been something important to do then,...I was trying to make a particular deadline which is my last final,...so I needed to be more focused on that particular final more than anything...*
Type of primary intrusion	Behavioral	*It was a Saturday night when I was out on a dinner birthday part and my boss called. It was around 9pm and we were about to go to a bar across the street. He said that his computer was not working and he needed things done before our trip the next day.*
	Psychological	*I wondered did I process it right…*
Type of technology used	Computer	*Let me sign into work, check some emails before I take this drive I signed into work and it ended up being almost a full day of*

Theme	Code	Example from Interview
		work...Because somebody saw an error, my manager just like flipped and went nuts, and I had to do a lot of work that day.
	Telephone/Smartphone	*Let me sign into work, check some emails before I take this drive. I signed into work and it ended up being almost a full day of work...Because somebody saw an error, my manager just like flipped and went nuts, and I had to do a lot of work that day.*
Details of behavioral intrusion	Complaint from client	*A customer calls up and starts complaining because the service technician was at their house, they didn't have the parts on their truck to restore the air conditioning during that very hot time...*
	Business problem	*The email blast didn't go out…it was a business issue.*
	Delayed work	*The project we were doing the construction at during the prior week, I received an email from the general manager of that facility that we're not authorized to proceed with any of the work.*
	Schedule conflict	*I got a call from my boss saying that it was an emergency at work...They were scheduled to work that night so it was kind of an emergency work situation where we had to get additional people into the office to handle the workload...*
	Demand	*One of the training classes that's going out on August 16th so it wasn't anything like crazy or hardcore that something was about to like go out...But just the way my manager reacted and stuff like that, there was really no opportunity to say I can take care of this when I get back.*
	Other needed help	*It was a Saturday night when I was out on a dinner birthday party and my boss called...He said that his computer was not working and he needed things done before our trip the next day.*
Interactions during behavioral intrusion	Client/customer	*So someone just happened to called up and said listen, your guy was just here and I'm unsatisfied, you couldn't get my AC up and running.*
Details of psychological intrusion	Rumination	*The whole time on the train I'm thinking I've attached all the paperwork and I'm really, really good at preparing draft emails, and finding that there is no attachment, that's one of my things*

Theme	Code	Example from Interview
		that I don't do, so I'm thinking oh my god did I attach it to the email. Did I attach the right part of the application, did I tell them to do this, did I tell them to do that.
	Mental preparation	*I was just trying to make sure everything was in order…and we had that conference call on Friday, and that took time out of the weekend as well, so I guess it was just a lot of mental.*
Frequency of intrusion	Never	*I'm like what happened, cause it's at 7:30 at night. What could possibly happen at 7:30 at night? So not only did I pick up the line, but my brain went into overdrive, my heart stopped. It's Wednesday night, no one should be calling me. Not from the office at least, not from the office.*
	Very rare	*I'm like what happened, cause it's at 7:30 at night. What could possibly happen at 7:30 at night? So not only did I pick up the line, but my brain went into overdrive, my heart stopped. It's Wednesday night, no one should be calling me. Not from the office at least, not from the office.*
	Infrequent	*It had happened twice before on a weekend if I could do some work.*
Reason for intrusion urgency	Customer service	*Yeah, there was revenue on the line and everything so I needed to make sure we took prompt action.*
	Source of intrusion	*It basically came from our director so I did what had to be done.*
	Large revenue	*It was essentially one of the biggest deals we were working on...and I think the previous meeting, it didn't go as well as it could have and you know, I think we were losing steam on the deal...*
	Impacted work schedule	*I would consider it urgent b/c if I hadn't done it on Sat, I def would have been there very late on Tues and Wed. it would have pushed everything back.*
	No else available	*Very urgent…it had to be done. No one else could cover for me. Not on that short of notice.*
Why intrusion was	No warning	*It wasn't very expected, I would say it was kinda outta the blue*

Theme	Code	Example from Interview
unexpected		*you know, my technician didn't call me and tell me that there was a problem with this particular customer…*
	Rare/infrequent event	*Definitely unexpected because it's rare that it happens, which is why I got comfortable and didn't check.*
Why intrusion was expected	Prior conversation/warnings	*Not really unexpected…could tell from his tone that he wasn't change the schedule. I knew when the case was scheduled for so knew which day I was going to hear from him.*
Reason intrusion was disruptive/intrusive	Mental disruption	*But mentally I was so disrupted that I just told her to watch television. I got aggravated. Mentally disruptive as I am making dinner this is what I was going to at work.*
	Thought it was emergency	*I found it intrusive to my being…not anything I was doing…my frame of mind…I didn't expect him to call me…it was alarming…if he called then something must have happened.*
Thoughts/feelings during intrusion	Positive/neutral Thoughts	*Expected it* *Nature of work* *Curious* *Surprised*
	Negative Thoughts	*Why is this happening* *Frustrated* *Frazzled* *Unfair* *Upset*
Others thoughts/feelings during intrusion	Positive/neutral Feelings or Mood	*Understanding* *Used to it* *Helpful* *Entertained or occupied by others* *No Impact*
	Negative Feelings or Mood	*Frustrated*
Type of primary unplanned nonwork-to-	Behavioral	*The result was me having to send an email to the sales manager who signed up this client, me having to contact my manager,*

Theme	Code	Example from Interview
work role switch		*forward the email to the director of the department, letting him know that the work is being interrupted.*
	Psychological	*I'm always wondering did I process it right so when I'm on the train, that 45 minute ride, I'm literally spending a half hour, you know, still thinking about whatever transaction just happened at work.*
Negative reason for unplanned nonwork-to-work role switch	Pressure from others	*Yes from my direct boss. I had to do it.*
	Pressure from self	*I gave myself pressure more. Bec I did not want to seem like it was not communicated earlier and we were busy doing other things, I was proud and did not want to say those things.*
	Pressure from significant other	*Husband said you have to do it.*
	Job insecurity	*So you feel like there's some pressure where, not job security where you feel like you would lose your job, but you do it cause you wanna show your commitment and you're loyal.*
	No choice	*Just mad at the fact that I didn't have a choice, like okay, I'll deal with that tomorrow morning.*
Neutral/positive reason for unplanned nonwork-to-work role switch	Expectations	*I get an immediate sense of it's my responsibility, I owe them to find, I have to do something about it, I think it's coming from all expectations. It's like someone's imposing expectations, and I don't have the right to push back.*
	Job description	*No pressure from anyone. It's part of what my job entails. Your surprise when the call comes but not a total surprise.*
	Dependence	*I knew he called me because he finds me to be one of the more dependable managers and he would have been disappointed. If I didn't go in then no other manager would go so I felt that I should do it.*
	Relationship maintenance	*There's two supervisors, Linda, who is going to be who I'm going to be working with for like the next ten years.*

Theme	Code	Example from Interview
	Job performance	*I'm in the sales division and that's how I get paid.*
		Yeah you wanna show your enthusiasm for the company and for your work that you do.
	Be prepared	*The CEO and others are looking for that email. I don't want anyone else to catch it first*
	Automatic reaction	*It's my job. Email is the second largest revenue source so it's important. It was automatic.*
Primary unplanned nonwork-to-work role switch behavior	Listen to voicemail	*My boss left a voicemail telling me he wants to talk on Saturday night, since he is leaving town on Monday and he needs a plan of action on Monday.*
	Provide help	*Exactly but it was to show him how to get a fax…*
	Understand problem	*I have to stop what I'm doing and spend an hour and a half of my time, my personal time, on Sunday at 7 o'clock at night, I have to take care of this customer and find out what happened.*
Behavioral duration of unplanned nonwork-to-work role switch	Few minutes	*Few minutes*
		Couple of minutes
	Few hours	*Few hours*
		Couple of hours
Primary unplanned nonwork-to-work role switch thoughts	Mental prepping	*I had to think about…I had to plan, I had to figure out the train, I had to…I'm going to this job fair, I had to figure out what clothes, you had to figure out everything.*
	Few hours	*Few hours*
		Couple of hours
Immediate behavioral follow-up	Call someone	*Right, and I spoke to my technician and said 'Look is there any way we could temporarily rig the unit in order to make it work even if it's to flip a switch every once in a while or something*
	Email someone	*I sent an email to the four people saying, 'hey, can you all meet in Angel's office and call me?'*
	Gather information	*So it was just explore something before you get some information,*

Theme	Code	Example from Interview
		and it turns out the information that I found turned out to be an error.
	Go home	*I answered the call and went home to log onto the platform to see the status of the email.*
	Travel to work	*I had to leave at 11:30pm at night to go to work.*
	Make travel plans	*I have to get my travel arrangements in order cause I'm going away for the weekend, I need to get a flight on Sunday night…*
	Set reminder	*At the time I put a note in my calendar so when I came back to work the day...*
Duration of behavioral follow-up	Few minutes	*Few minutes* *Couple of minutes*
	About an hour	*It took only 10 minutes to walk home and then about an hour to resolved. Then I went back out afterward.* *Limited but I spent 45 minutes on it. I made sure, I wrote the proper emails, I did my due diligence...*
	Few hours	*Few hours* *Couple of hours*
Immediate mental follow-up	Mental preparation	*It impacted me mentally. Not something I can resolve easily. I am already thinking way ahead on what my week is going to be like.*
	Thinking about work	*I cross the t's and forget to dot the i's. And if I did forget something, I would definitely know about it first thing in the morning.*
Duration of mental follow-up	Rest of day	*It was on my mind, it just changed the whole tone of the day.*
	All weekend	*There's a cloud over your head. Yeah so it just kinda hung over the whole weekend.*
	Few days	*Next few days* *Next several days* *Still thoughts about it the next few/couple of days*

Theme	Code	Example from Interview
Reason unplanned nonwork-to-work role switch was disruptive	Disrupted/interrupted personal time/activity	*This phone call took time away from my friends.*
	Bad timing	*So it was unexpected that my max 5 hour day turned in to 9 hours including the holiday.*
	Mentally distracted during personal/family time	*But mentally I was so disrupted that I just told her to watch television*
	Negatively impacted rest of day	*It impacted me quite a bit because I was supposed to go out after dinner but decided not to because I had to get up early the next day.*
Reason unplanned nonwork-to-work role switch was not disruptive	Quick task	*No it wasn't because I know the process and the process is really quick.*
Reason unplanned nonwork-to-work role switch was difficult	Bad timing	*The biggest issue for me was not so much that it intruded on personal time but it intruded on a very important personal time.*
	Distracted	*Mentally disruptive as I am making dinner this is what I was thinking to do at work. Lost my patience.*
	Mental switch	*I mean, there was certainly very difficult to get back into relaxation mode after that especially if I get yelled at from my customers.*
	Required multiple switches	*At some point, towards the end of the train ride towards class, I had this whole thing in my mind, whatever it is, you can't do anything about it now...just focus on what you have to do right now...so on the final I was focused on doing whatever it was at that time. But I did think about work, after the final.*
	Mental drain	*Mentally its draining. I say to myself I can't believe I have to stay up and go out again. It's exhausting.*
	Required memory/work knowledge	*And using your memory to remember the software that he's using and to walk him through it. To walk him through the software.*

Theme	Code	Example from Interview
Reason unplanned nonwork-to-work role switch was not difficult	Easy task	*No it wasn't because I know the process*
Thoughts during unplanned nonwork-to-work role switch	Negative	*Disbelief* *How am I going to do this?* *Give up* *Cannot be done without me*
Immediate outcome of unplanned nonwork-to-work role switch	Positive/neutral	*Able to help*
	Negative	*Held up work*
Thoughts after unplanned nonwork-to-work role switch	Positive/neutral	*Cannot dwell/move on* *Cannot change it* *Part of the job*
	Negative	*No control* *No choice* *Done or fed up* *Inconvenient*
Thoughts/feelings after unplanned nonwork-to-work role switch	Positive/neutral	*Sense of accomplishment*
	Negative	*Mentally exhausted* *Aggravated* *Resentment* *Angry or pissed* *Overloaded/overwhelmed* *No sense of accomplishment* *Rushed* *Anticlimactic*
Others thoughts/feelings after unplanned	Positive/neutral	*Cooperative* *Accepting*

Theme	Code	Example from Interview
nonwork-to-work role switch		*Cheerleader*
		Empathized
		Rationalized
		Used to it
	Negative	*Inpatient*
Short-term impact of unplanned nonwork-to-work role switch on others	Positive/neutral	*Move on*
	Negative	*Neglect*
		Worry
Long-term impact of unplanned nonwork-to-work role switch	Long-term follow-up	*Send emails on weekend*
		Make more telephone calls on weekend
		Had to work on holiday
		Had to go back to work
	Positive/neutral	*Moved on*
		Re-focused
		Felt a sense of satisfaction
	Negative	*Disrupted sleep*
		Was distracted
		Felt off track
		Inpatient
		Became short-tempered
Long-term impact of unplanned nonwork-to-work role switch on others	Positive/neutral	*Didn't impact her*
	Negative	*Missed part of vacation with significant other*
		Neglect
Final outcome of unplanned nonwork-to-	Positive/neutral	*Satisfied*
		Issue was resolved

Theme	Code	Example from Interview
work role switch work situation		
	Negative	*Didn't get the deal* *No sense of accomplishment*

Table 3a

Frequencies of Differentiating Themes and Codes for Planned and Unplanned Nonwork-to-Work Role Switching Episodes

Component	Theme	Code	Percentages of Unplanned Episodes	Percentages of Planned Episodes
Context	Current Nonwork Activity	Leisure activity or family event	44%	25%
		Nonwork tasks	28%	25%
		Recent transition to nonwork role	11%	0%
		Bed time	6%	25%
		Sleeping	6%	0%
Role Switching Characteristics	Negative Reason for Role Switch	Pressure from self	72%	0%
		Pressure from others	50%	0%
		No choice	39%	0%
		Pressure from significant other	6%	0%
		Job insecurity	6%	0%
	Neutral/Positive Reason for Role Switch	Expectations	67%	50%
		Dependence	61%	0%
		Relationship maintenance	39%	25%
		Automatic reaction	39%	25%
		Job description	33%	25%
		Productivity	22%	50%
		Be prepared	28%	75%
	Immediate Behavioral	Email someone	44%	0%

Component	Theme	Code	Percentages of Unplanned Episodes	Percentages of Planned Episodes
	Follow-Up			
		Gather information	44%	0%
		Call someone	33%	0%
	Duration of Mental Follow-Up	Rest of day	44%	0%
		All weekend	17%	0%
		Few days	11%	0%
Underlying Conditions of Role Switching	Reason for Disruption	Interrupted personal time/activity	78%	75%
		Negatively impacted rest of day	61%	25%
		Inconvenient/bad timing	50%	25%
		Mentally distracted during personal/family time	39%	25%
	Reason for Difficulty	Mental switch	61%	0%
		Mental drain	50%	25%
		Inconvenient/bad timing	44%	0%
		Distracted	44%	0%
		Required multiple switches	22%	0%
		Required memory/work knowledge	6%	0%
		Mentally unable to finish work day at usual time	0%	75%
Outcomes of Role Switching	Thoughts Afterward	Negative	94%	75%

Component	Theme	Code	Percentages of Unplanned Episodes	Percentages of Planned Episodes
		Positive/neutral	28%	50%
	Feelings or Mood Afterward	Negative	89%	75%
		Positive/neutral	28%	50%
	Others Thoughts/ Feelings or Mood Afterward	Negative	50%	50%
		Positive/neutral	22%	75%

Note. Values represent the percent of planned or unplanned nonwork-to-work role switching episodes flagged with a code. Multiple codes were applied to each episode. A subsample of planned episodes were coded (n = 4) and the full sample of unplanned episodes were coded (n = 18).

Table 3b

Mean Ratings and t-tests for Planned and Unplanned Nonwork-to-Work Role Switching Disruption and Difficulty

Component	Theme	Code	Unplanned Episodes Mean	Planned Episodes Mean
Underlying Conditions of Role Switching	Extent of Disruption	1 = not all disruptive to 7 = extremely disruptive	5.39***	3.89
	Extent of Difficulty	1 = not at all difficult to 7 = extremely difficulty	4.94*	4.00

Note. The extent of disruption and extent of difficulty represent mean scale ratings across participants and were based on the full sample for both planned (n = 18) and unplanned nonwork-to-work role switching episodes (n = 18).

*p < .05. **p < .01. ***p < .001.

Table 4

Measurement Items for Unexpected Work Intrusions and Unexpected Nonwork-to-Work Role Switching

	Item Text	Response Scale
Context	How many unexpected work intrusions during your nonwork hours did you experience today while in any nonwork location (e.g., home, car, store, other's home, gym, outdoors, etc.)?	Open-ended
Context	Thinking about the first work intrusion for today, answer the following questions: When did the unexpected work intrusion occur?	1 = Early morning, 2 = Morning, 3 = Afternoon, 4 = Evening, 5 = Late evening, 6 = During the middle of the night
Context	Who was with you at the time?	1 = No one (you were alone, 2 = My significant other (e.g., spouse, partner, boyfriend, girlfriend), 3 = My child(ren), 4 = Other family member(s) (e.g., parents, siblings), 5 = Friends
Context	Where were you?	1 = Home, 2 = Other's home, 3 = Car or other form of transportation, 4 = Store or restaurant, 5 = Outdoors, 6 = Other nonwork location_____
Context	What were you doing at the time?	1 = Leisure activity (e.g., relaxing, reading, eating, watching TV, using computer for personal reasons), 2 = Attending a social or family event, 3 = Nonwork task or domestic responsibility (e.g., cleaning, cooking, errands, home maintenance), 4 = Child care, 5 = Elder care, 6 = Cannot remember

	Item Text	Response Scale
Context	Who caused the work intrusion?	1 = Co-worker/colleague, 2 = Subordinate, 3 = Boss/manager/supervisor, 4 = Client/customer
Context	What was the nature of the intrusion?	1 = Question/request for information, 2 = Request for help, 3 = Demand, 4 = customer/client complaint, 5 = Information/update, 6 = Emergency, 7 = Work error, 8 = Other _____
Underlying Conditions	Based on your experience in your current job, indicate the extent to which this type of work intrusion is:	
	Unusual	1 = Not at all to 7 = Very much
	Expected	1 = Not at all to 7 = Very much
	Common	1 = Not at all to 7 = Very much
	Surprising	1 = Not at all to 7 = Very much
	Foreseeable	1 = Not at all to 7 = Very much
Underlying Conditions	Indicate the extent to which you perceived this particular work intrusion to be:	
	Necessary	1 = Not at all to 7 = Very much
	Important	1 = Not at all to 7 = Very much
	Urgent	1 = Not at all to 7 = Very much
	Something only you could address	1 = Not at all to 7 = Very much
	Did you ignore (i.e., choose not to respond to) the work intrusion?	1 = No, 2 = Yes
	If you ignored the intrusion, how difficult was it to do so?	1 = Not at all difficult to 7 = Extremely difficult
Underlying Conditions	Whether or not you responded, indicate the extent to which you felt that your response was:	

	Item Text	Response Scale
	Needed by others (e.g., co-workers, client, or customer)	1 = Not at all to 7 = Very much
	Part of your job responsibilities	1 = Not at all to 7 = Very much
	Expected by the person causing the intrusion	1 = Not at all to 7 = Very much
	Demanded by the person causing the intrusion	1 = Not at all to 7 = Very much
	Expected by someone else other than the person causing the intrusion	1 = Not at all to 7 = Very much
	Demanded by someone else other than the person causing the intrusion	1 = Not at all to 7 = Very much
	Whether or not you responded, indicate the extent to which you felt pressure to respond from:	
	Yourself	1 = Not at all to 7 = Very much
	The person causing the intrusion	1 = Not at all to 7 = Very much
	Someone internal to your company, besides the person causing the intrusion	1 = Not at all to 7 = Very much
	Someone external to your company (i.e., a client/customer)	1 = Not at all to 7 = Very much
Key Characteristics	If did not ignore the intrusion, how did you respond?	
	Replied to an email on your Smartphone	1 = No, 2 = Yes
	Logged onto your computer to respond to an email	1 = No, 2 = Yes
	Answered a phone call	1 = No, 2 = Yes
	Listened to a voicemail	1 = No, 2 = Yes
	Made a phone call	1 = No, 2 = Yes
	Other_____	Open-ended
Key Characteristics	Indicate the extent to which your response to the intrusion was:	
	Immediate	1 = Not at all to 7 = Very much
	Automatic	1 = Not at all to 7 = Very much
	Planned	1 = Not at all to 7 = Very much
Key Characteristics	To what extent was your response to the intrusion:	

	Item Text	Response Scale
	Bothersome	1 = Not at all to 7 = Very much
	Inconvenient (or came at a bad time)	1 = Not at all to 7 = Very much
	Disruptive	1 = Not at all to 7 = Very much
	Mentally distracting	1 = Not at all to 7 = Very much
Key Characteristics	To what extent was your response to the intrusion:	
	Easy	1 = Not at all to 7 = Very much
	Requiring mental effort	1 = Not at all to 7 = Very much
	Requiring physical effort	1 = Not at all to 7 = Very much
	Manageable	1 = Not at all to 7 = Very much
	Mentally draining	1 = Not at all to 7 = Very much
	Physically draining	1 = Not at all to 7 = Very much
	Challenging	1 = Not at all to 7 = Very much
Key Characteristics	How much time did you spend responding to the intrusion? (use minutes and hours, e.g., 15 minutes or 1 hour and 10 minutes). Do not include any further follow-up work that was done later on.	Open-ended
Outcomes	After responding to the intrusion, how much time did you spend:	
	Emailing colleagues, team members, or subordinates	1 = None at all to 7 = A lot of time
	Emailing your boss/manager/supervisor	1 = None at all to 7 = A lot of time
	Emailing clients/customers	1 = None at all to 7 = A lot of time
	Calling colleagues, team members, or subordinates	1 = None at all to 7 = A lot of time
	Calling your boss/manager/supervisor	1 = None at all to 7 = A lot of time
	Calling clients/customers	1 = None at all to 7 = A lot of time
	Doing other forms of work (<u>not</u> including emails or phone calls)	1 = None at all to 7 = A lot of time
Outcomes	<u>After</u> responding to the intrusion, to what extent did you:	

	Item Text	Response Scale
	Brainstorm work ideas	1 = Not at all to 7 = A great extent
	Mentally prepare for work	1 = Not at all to 7 = A great extent
	Worry about work	1 = Not at all to 7 = A great extent
	Ruminate about work (i.e., negative thoughts about work)	1 = Not at all to 7 = A great extent
	Think about work (but did not worry or ruminate)	1 = Not at all to 7 = A great extent
Outcomes	Indicate the extent to which your response to the intrusion positively impacted any of the following individuals today:	
	Yourself	1 = Not at all to 7 = Very much
	Your significant other/partner/spouse	1 = Not at all to 7 = Very much
	Your child(ren)	1 = Not at all to 7 = Very much
	Your other family members	1 = Not at all to 7 = Very much
	Your friends	1 = Not at all to 7 = Very much
Outcomes	Indicate the extent to which your response to the intrusion negatively impacted any of the following individuals today:	
	Yourself	1 = Not at all to 7 = Very much
	Your significant other/partner/spouse	1 = Not at all to 7 = Very much
	Your child(ren)	1 = Not at all to 7 = Very much
	Your other family members	1 = Not at all to 7 = Very much
	Your friends	1 = Not at all to 7 = Very much

Table 5a
Mean Clarity Ratings for Unplanned Nonwork-to-Work Role Switching Scale Items

Item Text	Response Scale	Interviewee Mean Clarity Rating	SME Mean Clarity Rating
How many unexpected work intrusions during your nonwork hours did you experience today while in any nonwork location (e.g., home, car, store, other's home, gym, outdoors, etc.).		5.00	3.50
Note, remember to think about work intrusions that were unexpected or unplanned, not work tasks or activities that were planned or scheduled ahead of time during nonwork hours, such as bringing work home with you. Only include intrusions/interruptions that occurred during your personal (i.e., nonwork) time. Unexpected work intrusions can be externally initiated (e.g., a phone call or email) or internally initiated (e.g., a work-related thought or concern). Focus only on the externally initiated work intrusions		6.50	6.00
If you did not experience any unplanned work intrusions today, then you do not need to complete the questionnaire today. If you experienced at least one unexpected work intrusion during your nonwork hours today, complete the following set of questions for each work intrusion:		7.00	5.33
Thinking about the first work intrusion for today, answer the following questions:		7.00	7.00

Item Text	Response Scale	Interviewee Mean Clarity Rating	SME Mean Clarity Rating
When did the unexpected work intrusion occur?	1 = Early morning, 2 = Morning, 3 = Afternoon, 4 = Evening, 5 = Late evening, 6 = During the middle of the night	7.00	5.50
Who was with you at the time?	1 = No one (you were alone, 2 = My significant other (e.g., spouse, partner, boyfriend, girlfriend), 3 = My child(ren), 4 = Other family member(s) (e.g., parents, siblings), 5 = Friends	7.00	6.00
Where were you?	1 = Home, 2 = Other's home, 3 = Car or other form of transportation, 4 = Store or restaurant, 5 = Outdoors, 6 = Other nonwork location_____	6.67	7.00
What were you doing at the time?	1 = Leisure activity (e.g., relaxing, reading, eating, watching TV, using computer for personal reasons), 2 = Attending a social or family event, 3 = Nonwork task or domestic responsibility (e.g., cleaning, cooking, errands, home maintenance), 4 = Child care, 5 = Elder care, 6 = Cannot remember	6.33	7.00
Who caused the work intrusion?	1 = Co-worker/colleague, 2 = Subordinate, 3 = Boss/manager/supervisor, 4 = Client/customer	6.33	7.00
What was the nature of the intrusion?	1 = Question/request for information, 2 = Request for help, 3 = Demand, 4 = customer/client complaint, 5 = Information/update, 6 = Emergency, 7 = Work error, 8 = Other _____	6.33	6.75
Based on your experience in your current job, indicate the extent to which this type of work intrusion is:		7.00	3.00

Item Text	Response Scale	Interviewee Mean Clarity Rating	SME Mean Clarity Rating
Unusual	1 = Not at all, 4 = Somewhat, 7 = Very much	7.00	5.75
Expected	1 = Not at all, 4 = Somewhat, 7 = Very much	5.67	5.75
Common	1 = Not at all, 4 = Somewhat, 7 = Very much	6.50	5.75
Surprising	1 = Not at all, 4 = Somewhat, 7 = Very much	6.00	5.75
Foreseeable	1 = Not at all, 4 = Somewhat, 7 = Very much	5.33	5.50
Indicate the extent to which you perceived this particular work intrusion to be:		6.33	6.67
Necessary	1 = Not at all, 4 = Somewhat, 7 = Very much	5.50	7.00
Important	1 = Not at all, 4 = Somewhat, 7 = Very much	5.50	7.00
Urgent	1 = Not at all, 4 = Somewhat, 7 = Very much	5.50	7.00
Something only you could address	1 = Not at all, 4 = Somewhat, 7 = Very much	5.50	7.00
Did you ignore (i.e., choose not to respond to) the work intrusion?	1 = No, 2 = Yes	7.00	7.00
If you ignored the intrusion, how difficult was it to do so?	1 = Not at all difficult, 4 = Somewhat difficult, 7 = Extremely difficult	6.33	6.75
Whether or not you responded, indicate the extent to which you felt that your response was:		6.33	6.00
Needed by others (e.g., co-workers, client, or customer)	1 = Not at all, 4 = Somewhat, 7 = Very much	6.00	6.75
Part of your job responsibilities	1 = Not at all, 4 = Somewhat, 7 = Very much	5.67	7.00
Expected by the person causing the intrusion	1 = Not at all, 4 = Somewhat, 7 = Very much	5.33	6.75
Demanded by the person causing the intrusion	1 = Not at all, 4 = Somewhat, 7 = Very much	5.33	6.75

Item Text	Response Scale	Interviewee Mean Clarity Rating	SME Mean Clarity Rating
Expected by someone else other than the person causing the intrusion	1 = Not at all, 4 = Somewhat, 7 = Very much	5.33	6.75
Demanded by someone else other than the person causing the intrusion	1 = Not at all, 4 = Somewhat, 7 = Very much	5.33	6.75
Whether or not you responded, indicate the extent to which you felt pressure to respond from:		5.50	6.00
Yourself	1 = Not at all, 4 = Somewhat, 7 = Very much	6.00	7.00
The person causing the intrusion	1 = Not at all, 4 = Somewhat, 7 = Very much	6.00	7.00
Someone internal to your company, besides the person causing the intrusion	1 = Not at all, 4 = Somewhat, 7 = Very much	6.00	7.00
Someone external to your company (i.e., a client/customer)	1 = Not at all, 4 = Somewhat, 7 = Very much	6.00	7.00
IMPORTANT: If you ignored or chose to not respond to the work intrusion, you do not need to complete the remaining questions for this work intrusion experience.		7.00	5.00
If did not ignore the intrusion, how did you respond?		6.50	5.00
Replied to an email on your SmartPhone	1 = No, 2 = Yes	7.00	7.00
Logged onto your computer to respond to an email	1 = No, 2 = Yes	6.67	7.00
Answered a phone call	1 = No, 2 = Yes	7.00	7.00
Listened to a voicemail	1 = No, 2 = Yes	7.00	5.75
Made a phone call	1 = No, 2 = Yes	7.00	7.00

Item Text	Response Scale	Interviewee Mean Clarity Rating	SME Mean Clarity Rating
Other_____		6.67	7.00
Indicate the extent to which your response to the intrusion was:		7.00	7.00
Immediate	1 = Not at all, 4 = Somewhat, 7 = Very much	6.33	7.00
Automatic	1 = Not at all, 4 = Somewhat, 7 = Very much	5.33	6.50
Planned	1 = Not at all, 4 = Somewhat, 7 = Very much	5.33	6.00
To what extent was your response to the intrusion:		6.50	7.00
Bothersome	1 = Not at all, 4 = Somewhat, 7 = Very much	6.00	7.00
Inconvenient (or came at a bad time)	1 = Not at all, 4 = Somewhat, 7 = Very much	5.33	7.00
Disruptive	1 = Not at all, 4 = Somewhat, 7 = Very much	5.33	7.00
Mentally distracting	1 = Not at all, 4 = Somewhat, 7 = Very much	6.00	7.00
To what extent was your response to the intrusion:		7.00	7.00
Easy	1 = Not at all, 4 = Somewhat, 7 = Very much	6.33	7.00
Requiring mental effort	1 = Not at all, 4 = Somewhat, 7 = Very much	6.33	7.00
Requiring physical effort	1 = Not at all, 4 = Somewhat, 7 = Very much	6.33	7.00
Manageable	1 = Not at all, 4 = Somewhat, 7 = Very much	6.33	7.00
Mentally draining	1 = Not at all, 4 = Somewhat, 7 = Very much	6.33	6.50
Physically draining	1 = Not at all, 4 = Somewhat, 7 = Very much	6.33	5.50
Challenging	1 = Not at all, 4 = Somewhat, 7 = Very much	4.67	7.00

Item Text	Response Scale	Interviewee Mean Clarity Rating	SME Mean Clarity Rating
How much time did you spend responding to the intrusion? (use minutes and hours, e.g., 15 minutes or 1 hour and 10 minutes). Do not include any further follow-up work that was done later on.		5.00	5.00
After responding to the intrusion, how much time did you spend:		4.50	5.00
Emailing colleagues, team members, or subordinates	1 = None at all, 4 = Some time, 7 = A lot of time	5.33	6.00
Emailing your boss/manager/supervisor	1 = None at all, 4 = Some time, 7 = A lot of time	5.33	6.00
Emailing clients/customers	1 = None at all, 4 = Some time, 7 = A lot of time	5.33	6.00
Calling colleagues, team members, or subordinates	1 = None at all, 4 = Some time, 7 = A lot of time	5.33	6.00
Calling your boss/manager/supervisor	1 = None at all, 4 = Some time, 7 = A lot of time	5.33	6.00
Calling clients/customers	1 = None at all, 4 = Some time, 7 = A lot of time	5.33	6.00
Doing other forms of work (not including emails or phone calls)	1 = None at all, 4 = Some time, 7 = A lot of time	5.00	6.00
After responding to the intrusion, to what extent did you:		6.00	6.00
Brainstorm work ideas	1 = Not at all, 4 = Somewhat, 7 = A great extent	6.00	6.75
Mentally prepare for work	1 = Not at all, 4 = Somewhat, 7 = A great extent	6.00	6.75

Item Text	Response Scale	Interviewee Mean Clarity Rating	SME Mean Clarity Rating
Worry about work	1 = Not at all, 4 = Somewhat, 7 = A great extent	6.00	6.75
Ruminate about work (i.e., negative thoughts about work)	1 = Not at all, 4 = Somewhat, 7 = A great extent	6.00	6.50
Think about work (but did not worry or ruminate)	1 = Not at all, 4 = Somewhat, 7 = A great extent	6.00	5.67
Indicate the extent to which your response to the intrusion positively impacted any of the following individuals today:		6.00	7.00
Yourself	1 = Not at all, 4 = Somewhat, 7 = Very much	6.33	7.00
Your significant other/partner/spouse	1 = Not at all, 4 = Somewhat, 7 = Very much	6.00	7.00
Your child(ren)	1 = Not at all, 4 = Somewhat, 7 = Very much	6.00	7.00
Your other family members	1 = Not at all, 4 = Somewhat, 7 = Very much	6.00	7.00
Your friends	1 = Not at all, 4 = Somewhat, 7 = Very much	6.00	7.00
Indicate the extent to which your response to the intrusion negatively impacted any of the following individuals today:		6.00	7.00
Yourself	1 = Not at all, 4 = Somewhat, 7 = Very much	6.33	7.00
Your significant other/partner/spouse	1 = Not at all, 4 = Somewhat, 7 = Very much	6.00	7.00
Your child(ren)	1 = Not at all, 4 = Somewhat, 7 = Very much	6.00	7.00
Your other family members	1 = Not at all, 4 = Somewhat, 7 = Very much	6.00	7.00
Your friends	1 = Not at all, 4 = Somewhat, 7 = Very much	6.00	7.00

Note. Mean clarity scores were based on a 7-point Likert scale (*1 = very unclear* to *7 = very clear*).

Table 5b
Mean Coverage Ratings for Unplanned Nonwork-to-Work Role Switching Scale Items

Item Text	Response Scale	SME Mean Coverage Rating
Did you ignore (i.e., choose not to respond to) the work intrusion?	1 = No, 2 = Yes	5.75
If you ignored the intrusion, how difficult was it to do so?	1 = Not at all difficult, 4 = Somewhat difficult, 7 = Extremely difficult	7.00
Whether or not you responded, indicate the extent to which you felt that your response was:		
Needed by others (e.g., co-workers, client, or customer)	1 = Not at all, 4 = Somewhat, 7 = Very much	6.50
Part of your job responsibilities	1 = Not at all, 4 = Somewhat, 7 = Very much	6.75
Expected by the person causing the intrusion	1 = Not at all, 4 = Somewhat, 7 = Very much	6.50
Demanded by the person causing the intrusion	1 = Not at all, 4 = Somewhat, 7 = Very much	6.50
Expected by someone else other than the person causing the intrusion	1 = Not at all, 4 = Somewhat, 7 = Very much	6.50
Demanded by someone else other than the person causing the intrusion	1 = Not at all, 4 = Somewhat, 7 = Very much	6.50
Whether or not you responded, indicate the extent to which you felt pressure to respond from:		
Yourself	1 = Not at all, 4 = Somewhat, 7 = Very much	7.00
The person causing the intrusion	1 = Not at all, 4 = Somewhat, 7 = Very much	7.00
Someone internal to your company, besides the person causing the intrusion	1 = Not at all, 4 = Somewhat. 7 = Very much	7.00
Someone external to your company (i.e., a client/customer)	1 = Not at all, 4 = Somewhat, 7 = Very much	7.00
If did not ignore the intrusion, how did you respond?		
Replied to an email on your Smartphone	1 = No, 2 = Yes	6.00
Logged onto your computer to respond to an email	1 = No, 2 = Yes	6.00

Item Text	Response Scale	SME Mean Coverage Rating
Answered a phone call	1 = No, 2 = Yes	7.00
Listened to a voicemail	1 = No, 2 = Yes	7.00
Made a phone call	1 = No, 2 = Yes	7.00
Other		6.50
Indicate the extent to which your response to the intrusion was:		
Immediate	1 = Not at all, 4 = Somewhat, 7 = Very much	7.00
Automatic	1 = Not at all, 4 = Somewhat, 7 = Very much	6.75
Planned	1 = Not at all, 4 = Somewhat, 7 = Very much	7.00
To what extent was your response to the intrusion:		
Bothersome	1 = Not at all, 4 = Somewhat, 7 = Very much	7.00
Inconvenient (or came at a bad time)	1 = Not at all, 4 = Somewhat, 7 = Very much	7.00
Disruptive	1 = Not at all, 4 = Somewhat, 7 = Very much	7.00
Mentally distracting	1 = Not at all, 4 = Somewhat, 7 = Very much	7.00
To what extent was your response to the intrusion:		
Easy	1 = Not at all, 4 = Somewhat, 7 = Very much	7.00
Requiring mental effort	1 = Not at all, 4 = Somewhat, 7 = Very much	7.00
Requiring physical effort	1 = Not at all, 4 = Somewh	
Manageable	1 = Not at all, 4 = Somewhat, 7 = Very much	7.00
Mentally draining	1 = Not at all, 4 = Somewhat, 7 = Very much	7.00
Physically draining	1 = Not at all, 4 = Somewhat, 7 = Very much	6.50
Challenging	1 = Not at all, 4 = Somewhat, 7 = Very much	7.00
How much time did you spend responding to the intrusion? (use minutes and hours, e.g., 15 minutes or 1 hour and 10 minutes)		

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Item Text	Response Scale	SME Mean Coverage Rating
Do not include any further follow-up work that was done later on.		
After responding to the intrusion, how much time did you spend:		
Emailing colleagues, team members, or subordinates	1 = None at all, 4 = Some time, 7 = A lot of time	6.50
Emailing your boss/manager/supervisor	1 = None at all, 4 = Some time, 7 = A lot of time	6.50
Emailing clients/customers	1 = None at all, 4 = Some time, 7 = A lot of time	6.50
Calling colleagues, team members, or subordinates	1 = None at all, 4 = Some time, 7 = A lot of time	6.50
Calling your boss/manager/supervisor	1 = None at all, 4 = Some time, 7 = A lot of time	6.50
Calling clients/customers	1 = None at all, 4 = Some time, 7 = A lot of time	6.50
Doing other forms of work (not including emails or phone calls)	1 = None at all, 4 = Some time, 7 = A lot of time	6.50
After responding to the intrusion, to what extent did you:		
Brainstorm work ideas	1 = Not at all, 4 = Somewhat, 7 = A great extent	6.50
Mentally prepare for work	1 = Not at all, 4 = Somewhat, 7 = A great extent	6.50
Worry about work	1 = Not at all, 4 = Somewhat, 7 = A great extent	6.50
Ruminate about work (i.e., negative thoughts about work)	1 = Not at all, 4 = Somewhat, 7 = A great extent	6.50
Think about work (but did not worry or ruminate)	1 = Not at all, 4 = Somewhat, 7 = A great	6.50

Item Text	Response Scale	SME Mean Coverage Rating
	extent	
Indicate the extent to which your response to the intrusion positively impacted any of the following individuals today:		
Yourself	1 = Not at all, 4 = Somewhat, 7 = Very much	6.00
Your significant other/partner/spouse	1 = Not at all, 4 = Somewhat, 7 = Very much	5.75
Your child(ren)	1 = Not at all, 4 = Somewhat, 7 = Very much	5.75
Your other family members	1 = Not at all, 4 = Somewhat, 7 = Very much	5.75
Your friends	1 = Not at all, 4 = Somewhat, 7 = Very much	5.75
Indicate the extent to which your response to the intrusion negatively impacted any of the following individuals today:		
Yourself	1 = Not at all, 4 = Somewhat, 7 = Very much	7.00
Your significant other/partner/spouse	1 = Not at all, 4 = Somewhat, 7 = Very much	6.75
Your child(ren)	1 = Not at all, 4 = Somewhat, 7 = Very much	6.75
Your other family members	1 = Not at all, 4 = Somewhat, 7 = Very much	6.75
Your friends	1 = Not at all, 4 = Somewhat, 7 = Very much	6.75

Note. Mean coverage scores were based on a 7-point Likert scale (1 = *strongly disagree* to 7 = *strongly agree*).

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Table 5c

Revisions for Questionnaire Instructions and Measures of Work Intrusions and Unplanned Nonwork-to-Work Role Switching

Original Item Text	New Item Text	Original Response Scale	New Response Scale	Action	Source
How many unexpected work intrusions <u>during your nonwork hours</u> did you experience today <u>while in any nonwork location</u> (e.g., home, car, store, other's home, gym, outdoors, etc.)?	Did you experience at least one unexpected work intrusion today during your personal time? How many unexpected work intrusions did you experience today during your nonwork hours while in any nonwork location? IMPORTANT: Remember to think about intrusions that may have occurred very early this morning?		1 = n*o*, 2 = y*es* 1 = *1*, 2 = *2*, 3 = *3*, 4 = *4*, 5 = *5 or more*	Revised item and added item asking if at least one intrusion occurred	Both
Note, remember to think about work intrusions that were unexpected or unplanned, not work tasks or activities that were planned or scheduled ahead of time during nonwork hours, such as bringing work	Please read the following definitions before responding to the questions below. Nonwork Hours: The part of your day that is beyond your normal work schedule or typical			Revised instruction text and changed order of text so lead-in text appears prior to first question	Both

Original Item Text	New Item Text	Original Response Scale	New Response Scale	Action	Source
home with you. Only include intrusions/interruptions that occurred during your personal (i.e., nonwork) time. Unexpected work intrusions can be externally initiated (e.g., a phone call or email) or internally initiated (e.g., a work-related thought or concern). Focus only on the externally initiated work intrusions.	work hours; i.e., your personal time. This includes the hours before or after work on a work day, or anytime on a nonwork day. Nonwork Location: A location other than your traditional work location (i.e., office), e.g., your home, car, a store or restaurant, someone else's home, the gym, outdoors, etc. Unexpected Work Intrusions: A work task/activity that unexpectedly interrupts your personal time, such as an unexpected phone call from a co-worker or an unexpected e-mail from your boss. Do NOT include planned work tasks/activities during your personal time, such as bringing work home with you or a scheduled late-night				

Original Item Text	New Item Text	Original Response Scale	New Response Scale	Action	Source
	meeting. Types of Work Intrusions: Only include unexpected intrusions that were initiated by someone other than yourself (e.g., phone call or email from your boss) during your personal time. Based on this definition, work-related thoughts or concerns do not count as unexpected intrusions				
If you did not experience any unplanned work intrusions today, then you do not need to complete the questionnaire today. If you experienced at least one unexpected work intrusion during your nonwork hours today, complete the following set of questions for <u>each</u> work intrusion:				Removed text	SME

Original Item Text	New Item Text	Original Response Scale	New Response Scale	Action	Source
Thinking about the first work intrusion for today, answer the following questions:	Still thinking about the FIRST [SECOND] intrusion today, answer the following questions:			Revised text to account for multiple intrusions	
When did the unexpected work intrusion occur?	When did the unexpected work intrusion occur? Provide the time of day	1 = Early morning, 2 = Morning, 3 = Afternoon, 4 = Evening, 5 = Late evening, 6 = During the middle of the night	Open-ended	Changed response scale to open-ended	SME
Who was with you at the time?	Who was with you at the time?	1 = No one (you were alone, 2 = My significant other (e.g., spouse, partner, boyfriend, girlfriend), 3 = My child(ren), 4 = Other family member(s) (e.g., parents, siblings), 5 = Friends	1=no one, i.e., you were alone, 2=my significant other, e.g., spouse, partner, boyfriend, girlfriend, 3=my child(ren), 4=other family member(s), e.g., parents, siblings, 5=friends, 6 = other	Added “Other” response option	SME
Where were you?		1 = Home, 2 = Other's home, 3 = Car or other form of transportation, 4 = Store or restaurant, 5 = Outdoors, 6 =		No change	

Original Item Text	New Item Text	Original Response Scale	New Response Scale	Action	Source
		Other nonwork location_____			
What were you doing at the time?		1 = Leisure activity (e.g., relaxing, reading, eating, watching TV, using computer for personal reasons), 2 = Attending a social or family event, 3 = Nonwork task or domestic responsibility (e.g., cleaning, cooking, errands, home maintenance), 4 = Child care, 5 = Elder care, 6 = Cannot remember	1=leisure activity, e.g., relaxing, reading, eating, watching TV, using computer for personal reasons, 2=attending a social or family event, 3=nonwork task or domestic responsibility, e.g., cleaning, cooking, errands, home maintenance, 4=child care, 5 = Elder care, 6=cannot remember, 7=other	Added "Other" response option	SME
Who caused the work intrusion?		1 = Co-worker/colleague, 2 = Subordinate, 3 = Boss/manager/supervisor, 4 =	1=co-worker/colleague, 2=subordinate, 3=boss/manager/supervisor,	Added "Other" response option	SME

Original Item Text	New Item Text	Original Response Scale	New Response Scale	Action	Source
		Client/customer	4=client/customer, 5=other		
	What type of intrusion was it?		1=phone call/missed call, 2=voicemail notification, 3=text message, 4=email notification, 5=other	New item and scale	
What was the nature of the intrusion?		1 = Question/request for information, 2 = Request for help, 3 = Demand, 4 = customer/client complaint, 5 = Information/update, 6 = Emergency, 7 = Work error, 8 = Other _____		No change	
Based on your experience in your current job, indicate the extent to which this type of work intrusion is:	Based on your response to the previous question, to what extent was this particular type of intrusion the following (take into consideration who caused the intrusion):			Revised instruction text	SME
Unusual		1 = Not at all to 7 =		No change	

Original Item Text	New Item Text	Original Response Scale	New Response Scale	Action	Source
		Very much			
Expected		1 = Not at all to 7 = Very much		Removed item	Both
Common		1 = Not at all to 7 = Very much		No change	
Surprising		1 = Not at all to 7 = Very much		No change	
Foreseeable		1 = Not at all to 7 = Very much		No change	
Indicate the extent to which you perceived this particular work intrusion to be:	And now indicate the extent to which you thought this particular work intrusion was:			Revised lead-in text to be more user-friendly	
Necessary		1 = Not at all to 7 = Very much		No change	
Important		1 = Not at all to 7 = Very much		No change	
Urgent		1 = Not at all to 7 = Very much		No change	
Something only you could address		1 = Not at all to 7 = Very much		No change	
Did you ignore (i.e., choose not to respond to) the work intrusion?	Still thinking about the FIRST [SECOND] intrusion you experienced today... Did the intrusion require a response from you?	1 = No, 2 = Yes		Added lead-in text and revised item to be more specific	SME
If you ignored the intrusion, how difficult		1 = Not at all difficult to 7 = Extremely		Removed item	SME

Original Item Text	New Item Text	Original Response Scale	New Response Scale	Action	Source
was it to do so?		difficult			
Whether or not you responded, indicate the extent to which you felt that your response was:	To what extent did you feel that a response on your part was:			Revised instruction text to be more specific	SME
Needed by others (e.g., co-workers, client, or customer)		1 = Not at all to 7 = Very much		No change	
Part of your job responsibilities		1 = Not at all to 7 = Very much		No change	
Expected by the person causing the intrusion		1 = Not at all to 7 = Very much		Removed item	SME
Demanded by the person causing the intrusion		1 = Not at all to 7 = Very much		No change	
Expected by someone else other than the person causing the intrusion		1 = Not at all to 7 = Very much		No change	
Demanded by someone else other than the person causing the intrusion		1 = Not at all to 7 = Very much		No change	
Whether or not you responded, indicate the extent to which you felt pressure to respond from:	To what extent did you feel pressure to respond from:			Revised instruction text	SME
Yourself		1 = Not at all to 7 =		No change	

Original Item Text	New Item Text	Original Response Scale	New Response Scale	Action	Source
		Very much			
The person causing the intrusion		1 = Not at all to 7 = Very much		No change	
Someone internal to your company, besides the person causing the intrusion		1 = Not at all to 7 = Very much		No change	
Someone external to your company (i.e., a client/customer)		1 = Not at all to 7 = Very much		No change	
IMPORTANT: If you ignored or chose to not respond to the work intrusion, you do not need to complete the remaining questions for this work intrusion experience.	Did you react to the intrusion in any way? (IMPORTANT: Even thinking about work, listening to a voicemail, or reading an e-mail or text is considered a reaction. Select "No" only if you completely ignored the intrusion.)			Revised instruction text	SME
If did not ignore the intrusion, how did you respond?	How did you respond to the FIRST [SECOND] intrusion?			Revised instruction text	SME
Replied to an email on your Smartphone		1 = No, 2 = Yes		No change	
Logged onto your computer to respond to an email		1 = No, 2 = Yes		No change	
Answered a phone call		1 = No, 2 = Yes		No change	

Original Item Text	New Item Text	Original Response Scale	New Response Scale	Action	Source
Listened to a voicemail		1 = No, 2 = Yes		No change	
Made a phone call		1 = No, 2 = Yes		No change	
Other_____					
Indicate the extent to which your response to the intrusion was:					
Immediate		1 = Not at all to 7 = Very much		No change	
Automatic		1 = Not at all to 7 = Very much		No change	
Planned		1 = Not at all to 7 = Very much		Removed item	Both
To what extent was your response to the intrusion:					
Bothersome		1 = Not at all to 7 = Very much		No change	
Inconvenient (or came at a bad time)		1 = Not at all to 7 = Very much		Removed item	Both
Disruptive		1 = Not at all to 7 = Very much		No change	
Mentally distracting		1 = Not at all to 7 = Very much		No change	
To what extent was your response to the				Revised instruction text	SME

Original Item Text	New Item Text	Original Response Scale	New Response Scale	Action	Source
intrusion:					
Easy		1 = Not at all to 7 = Very much		No change	
Requiring mental effort		1 = Not at all to 7 = Very much		No change	
Requiring physical effort		1 = Not at all to 7 = Very much		No change	
Manageable		1 = Not at all to 7 = Very much		Removed item	SME
Mentally draining		1 = Not at all to 7 = Very much		Removed item	SME
Physically draining		1 = Not at all to 7 = Very much		Removed item	SME
Challenging		1 = Not at all to 7 = Very much			
How much time did you spend responding to the intrusion? (use minutes and hours, e.g., 15 minutes or 1 hour and 10 minutes)? Do not include any further follow-up work that was done later on.	About how much personal (i.e., nonwork) time did you spend today responding to this particular intrusion? (Use minutes and hours, e.g., 15 minutes or 1 hour and 10 minutes). IMPORTANT: Include any further follow-up work that was done later in the day during his/her personal time.			Revised item	SME
After responding to the intrusion, how much				Removed item	SME

Original Item Text	New Item Text	Original Response Scale	New Response Scale	Action	Source
time did you spend:					
Emailing colleagues, team members, or subordinates		1 = None at all to 7 = A lot of time		Removed item	Both
Emailing your boss/manager/supervisor		1 = None at all to 7 = A lot of time		Removed item	Both
Emailing clients/customers		1 = None at all to 7 = A lot of time		Removed item	Both
Calling colleagues, team members, or subordinates		1 = None at all to 7 = A lot of time		Removed item	Both
Calling your boss/manager/supervisor		1 = None at all to 7 = A lot of time		Removed item	Both
Calling clients/customers		1 = None at all to 7 = A lot of time		Removed item	Both
Doing other forms of work (<u>not</u> including emails or phone calls)		1 = None at all to 7 = A lot of time		Removed item	Both
<u>After</u> responding to the intrusion, to what extent did you:				Removed instructions	SME
Brainstorm work ideas		1 = Not at all to 7 = A great extent		Removed item	SME
Mentally prepare for work		1 = Not at all to 7 = A great extent		Removed item	SME
Worry about work		1 = Not at all to 7 = A great extent		Removed item	SME
Ruminate about work (i.e., negative thoughts about work)		1 = Not at all to 7 = A great extent		Revised item	SME

Original Item Text	New Item Text	Original Response Scale	New Response Scale	Action	Source
Think about work (but did not worry or ruminate)		1 = Not at all to 7 = A great extent		Revised item	SME
Indicate the extent to which your response to the intrusion positively impacted any of the following individuals today:				Removed instructions	SME
Yourself		1 = Not at all to 7 = Very much		Removed item	SME
Your significant other/partner/spouse		1 = Not at all to 7 = Very much		Removed item	SME
Your child(ren)		1 = Not at all to 7 = Very much		Removed item	SME
Your other family members		1 = Not at all to 7 = Very much		Removed item	SME
Your friends		1 = Not at all to 7 = Very much		Removed item	SME
Indicate the extent to which your response to the intrusion negatively impacted any of the following individuals today:				Removed instructions	SME
Yourself		1 = Not at all to 7 = Very much		Removed item	SME
Your significant other/partner/spouse		1 = Not at all to 7 = Very much		Removed item	SME
Your child(ren)		1 = Not at all to 7 =		Removed item	SME

Original Item Text	New Item Text	Original Response Scale	New Response Scale	Action	Source
		Very much			
Your other family members		1 = Not at all to 7 = Very much		Removed item	SME
Your friends		1 = Not at all to 7 = Very much		Removed item	SME
Your friends		1 = Not at all to 7 = Very much		Removed item	SME

Table 6

Final Measurement Scales for Work Intrusions and Unplanned Nonwork-to-Work Role Switching

Measurement Scale	Lead-In Text	Item	Response Scale
Definitions	Please read the following definitions before responding to the questions below.	Nonwork Hours: The part of your day that is beyond your normal work schedule or typical work hours; i.e., your personal time. This includes the hours before or after work on a work day, or anytime on a nonwork day. Nonwork Location: A location other than your traditional work location (i.e., office), e.g., your home, car, a store or restaurant, someone else's home, the gym, outdoors, etc. Unexpected Work Intrusions: A work task/activity that unexpectedly interrupts your personal time, such as an unexpected phone call from a co-worker or an unexpected e-mail from your boss. Do NOT include planned work tasks/activities during your personal time, such as bringing work home with you or a scheduled late-night meeting.	

Measurement Scale	Lead-In Text	Item	Response Scale
		Types of Work Intrusions: Only include unexpected intrusions that were initiated by someone other than yourself (e.g., phone call or email from your boss) during your personal time. Based on this definition, work-related thoughts or concerns do not count as unexpected intrusions.	
Work intrusion frequency		Did you experience at least one unexpected work intrusion today during your personal time?	1 = n*o*, 2 = y*es*
		How many unexpected work intrusions did you experience today during your nonwork hours while in any nonwork location? IMPORTANT: Remember to think about intrusions that may have occurred very early this morning?	1=*1*, 2=*2*, 3=*3*, 4=*4*, 5=*5 or more*
Work intrusion context	Still thinking about the FIRST [SECOND] intrusion today, answer the following questions:	When did the unexpected work intrusion occur? Provide the time of day.	Open-ended
		Who was with you at the time?	1=n*o one, i.e., you were alone*, 2=*my significant other, e.g., spouse, partner, boyfriend, girlfriend*, 3=*my child(ren)*, 4=*other family member(s), e.g.,*

Measurement Scale	Lead-In Text	Item	Response Scale
			parents, siblings, 5=f*riends,* 6 = o*ther*
		Where were you?	1=*home*, 2=*other's home*, 3=*car or other form of transportation*, 4=*store or restaurant*, 5=*outdoors*, 6=*other nonwork location*
		What were you doing at the time?	1=*leisure activity, e.g., relaxing, reading, eating, watching TV, using computer for personal reasons*, 2=*attending a social or family event*, 3=*nonwork task or domestic responsibility, e.g., cleaning, cooking, errands, home maintenance*, 4=*child care*, 5 = *Elder care*, 6=*cannot remember*, 7=*other*
		Who caused the work intrusion?	1=*co-worker/colleague*, 2=*subordinate*, 3=*boss/manager/supervisor*, 4=*client/customer*, 5=*other*
		What type of intrusion was it?	1=*phone call/missed call*, 2=*voicemail notification*, 3=*text message*, 4=*email notification*, 5=*other*

Measurement Scale	Lead-In Text	Item	Response Scale
		What was the nature of the intrusion?	1=*question/request for information*, 2=*request for help*, 3=*demand*, 4=*complaint*, 5=*information/update for you*, 6=*emergency*, 7=*work error*, 8=*other*
Work intrusion unpredictability	Based on your response to the previous question, to what extent was this particular type of intrusion the following (take into consideration who caused the intrusion):	Unusual	1=*not at all* to 7=*very much*
		Foreseeable	1=*not at all* to 7=*very much*
		Common	1=*not at all* to 7=*very much*
		Surprising	1=*not at all* to 7=*very much*
Work intrusion significance	And now indicate the extent to which you thought this particular work intrusion was:	Necessary	1=*not at all* to 7=*very much*
		Important	1=*not at all* to 7=*very much*
		Urgent	1=*not at all* to 7=*very much*
		Something only you could address	1=*not at all* to 7=*very much*

Measurement Scale	Lead-In Text	Item	Response Scale
Response expectation	Still thinking about the FIRST [SECOND] intrusion you experienced today...	Did the intrusion require a response from you?	1=*no*, 2=*yes*
	To what extent did you feel that a response on your part was:	Needed by others (e.g., boss/supervisor/manager, co-workers, client, or customer)	1=*not at all* to 7=*very much*
		Part of your job responsibilities	1=*not at all* to 7=*very much*
		Expected by the person causing the intrusion	1=*not at all* to 7=*very much*
		Demanded by the person causing the intrusion	1=*not at all* to 7=*very much*
		Expected by someone else other than the person causing the intrusion	1=*not at all* to 7=*very much*
		Demanded by someone else other than the person causing the intrusion	
Response pressure	To what extent did you feel pressure to respond from:	Yourself	1=*not at all* to 7=*very much*
		The person causing the intrusion	1=*not at all* to 7=*very much*
		Someone internal to your company, besides the person	1=*not at all* to 7=*very much*

Measurement Scale	Lead-In Text	Item	Response Scale
		causing the intrusion	
		Someone external to your company (i.e., a client/customer)	1=*not at all* to 7=*very much*
Response type		Did you react to the intrusion in any way? (IMPORTANT: Even thinking about work, listening to a voicemail, or reading an e-mail or text is considered a reaction. Select "No" only if you completely ignored the intrusion.)	1=*no*, 2=*yes*
	How did you respond to the FIRST [SECOND] intrusion?	Thought about it	1=*no*, 2=*yes*
		Read an email or text message on your Smartphone	1=*no*, 2=*yes*
		Read an email by logging onto a computer or tablet (e.g., iPad)	1=*no*, 2=*yes*
		Replied to an email or text message on your Smartphone	1=*no*, 2=*yes*
		Replied to an email by logging onto a computer or tablet (e.g., iPad)	1=*no*, 2=*yes*
		Listened to a voicemail	1=*no*, 2=*yes*

Measurement Scale	Lead-In Text	Item	Response Scale
		Answered a phone call	1=*no*, 2=*yes*
		Made a phone call	1=*no*, 2=*yes*
		Did other work tasks not involving emails or phone calls	1=*no*, 2=*yes*
		Other type of response	1=*no*, 2=*yes*
Response length		About how much personal (i.e., nonwork) time did you spend today responding to this particular intrusion? (Use minutes and hours, e.g., 15 minutes or 1 hour and 10 minutes). IMPORTANT: Include any further follow-up work that was done later in the day during his/her personal time.	Open-ended
Response impulse	Indicate the extent to which your response to the intrusion was:	Immediate (i.e., instant; you did not hesitate)	
		Automatic (i.e., you didn't even have to think about it)	1=*not at all* to 7=*very much*
Response interference	And to what extent was responding to the intrusion:	Bothersome	1=*not at all* to 7=*very much*
		Disruptive	1=*not at all* to 7=*very much*
Response	To what extent was your	Mentally distracting	1=*not at all* to 7=*very much*

Measurement Scale	Lead-In Text	Item	Response Scale
difficulty	response to the intrusion:		
		Easy	1=*not at all* to 7=*very much*
		Challenging (i.e., difficult to do)	1=*not at all* to 7=*very much*
	To what extent did your response to the intrusion:	Require mental effort	1=*not at all* to 7=*very much*
		Require physical effort	1=*not at all* to 7=*very much*
Filler items	Did the following occur today during your nonwork hours because of this particular work intrusion	Had negative thoughts about work	1 = no, 2 = *yes*
		Had positive thoughts about work	1 = no, 2 = *yes*
		Thought about work in neither a negative or positive way	1 = no, 2 = *yes*
	To what extent did you feel the following today:	Mentally tired	1 = n*ot at all* to 7 = a *lot*
		Emotionally drained	1 = n*ot at all* to 7 = a *lot*
		Physically tired	1 = n*ot at all* to 7 = a *lot*
	To what extent do you think your response to this intrusion:	Negatively affected your spouse/partner?	1=*not at all* to 7=*very much*
		Positively affected your spouse/partner?	

Measurement Scale	Lead-In Text	Item	Response Scale
		To what extent were you surprised that you did not experience any work intrusions today?	1=*not at all* to 7=*very much*
		Were you with anyone else during your personal time today? (NOTE: your personal time can be before or after work if today was a workday.)	1 = *no*, 2 = *yes*
		At which nonwork location did you spend most of your nonwork time today?	1=*home*, 2=*other's home*, 3=*car or other form of transportation*, 4=*store or restaurant*, 5=*outdoors*, 6=*other nonwork location*
		What nonwork task/activity did you spend the most time doing today?	1=*leisure activity, e.g., relaxing, reading, eating, watching TV, using computer for personal reasons*, 2=*attending a social or family event*, 3=*nonwork task or domestic responsibility, e.g., cleaning, cooking, errands, home maintenance*, 4=*child care*, 5=*elder care*, 6=*cannot remember*, 7=*other*
	Pretend that you did experience at least one work intrusion today…	To what extent do you think you would have ignored the intrusion?	1=*not at all* to 7=*very much*

Measurement Scale	Lead-In Text	Item	Response Scale
			1=*not at all* to 7=*very much*
	To what extent did the following occur for you during your personal time today:	Had negative thoughts about work	
		Had positive thoughts about work	1=*not at all* to 7=*very much*
		Thought about work in neither a negative or positive way	1=*not at all* to 7=*very much*
	To what extent do you think a response to this intrusion:	Would have negatively affected your spouse/partner?	1=*not at all* to 7=*very much*
		Would have positively affected your spouse/partner?	1=*not at all* to 7=*very much*

Table 7
Maximum Likelihood Factor Analysis (Oblimin Rotation) for Work Intrusions Scales

	Factor Loadings			
Item	Intrusion Significance	Intrusion Pressure	Intrusion Demands	Intrusion Predictability
Intrusion was...Necessary	**.946**	-.012	-.047	.059
Intrusion was...Important	**.934**	.099	-.068	.042
Intrusion was...Something only you could address	**.582**	-.020	.057	.142
Felt pressure to respond from: Yourself	.117	**.688**	.047	.167
Felt pressure to respond from: The person causing the intrusion	.082	**.539**	.257	.054
A response on your part was...Demanded by the person causing the intrusion	-.120	.281	**.721**	.110
A response on your part was...Expected by someone else other than the person causing the intrusion	-.015	.058	**.888**	.059
A response on your part was...Demanded by someone else other than the person causing the intrusion	-.007	-.078	**1.018**	-.012
Intrusion was...Unusual	.111	.246	-.030	**.739**
Intrusion was...Common	.053	-.237	-.062	**.597**
Intrusion was...Surprising	-.025	.049	.120	**.500**
A response on your part was...Needed by others	.403	.446	.033	-.025
A response on your part was...Part of your job responsibilities	.370	.521	-.015	-.280
A response on your part was…Expected by the person causing the intrusion	-.004	.512	.295	-.308

Item	Factor Loadings			
	Intrusion Significance	Intrusion Pressure	Intrusion Demands	Intrusion Predictability
Felt pressure to respond from: Someone external to your company	.052	.276	.330	.270
Intrusion was...Foreseeable	-.079	.030	-.126	.035
Felt pressure to respond from: Someone internal to your company, besides the person causing the intrusion	-.076	.435	.553	.294
Intrusion was...Urgent	.776	.059	.182	.054

Note. Values represent pattern matrix coefficients. Numbers in boldface indicate dominant factor loadings. If there is no number in boldface, then the item did not have a dominant factor loading and was not retained. The item "Intrusion was...Urgent" was not included in the Intrusion Significance factor since it had a structure matrix coefficient loading of .4 or higher on three different factors.

Table 8

Confirmatory Factor Analysis for Multidimensional Measure of Work Intrusion Pressure

						RMSEA 90% CI	
Model	*df*	χ^2 (N = 68)	χ^2/df	CFI	SRMR	RMSEA	Lower	Upper
Model 1	4	7.19	1.80	.99	.10	.04	.00	.23
Model 2	5	28.58	5.72	.90	.10	.26	.17	.35

Note. Model 1 is a two-factor model that included intrusion pressure and intrusion demand. Model 2 is a one-factor model combining the intrusion pressure and intrusion demand factors. CFI = comparative fit index; SRMR = standardized root mean-square residual; RMSEA = root mean-square error of approximation; CI = confidence interval.

Table 9

Confirmatory Factor Analysis for Work Intrusion Significance and Pressure Variables

						RMSEA 90% CI	
Model	*df*	χ^2 (N = 68)	χ^2/df	CFI	SRMR	RMSEA	Lower	Upper
Model 1	17	31.04	1.83	.99	.10	.04	.00	.16
Model 2	20	252.42	12.62	.42	.29	.42	.37	.46

Note. Model 1 is a three-factor model with the multidimensional work intrusion pressure scale and the work intrusion significance scale. Model 2 is a one-factor model combining the work intrusion pressure and significance scales. CFI = comparative fit index; SRMR = standardized root mean-square residual; RMSEA = root mean-square error of approximation; CI = confidence interval.

Table 10
Final Work Intrusion Measurement Scales

Variable	Dimension	Item	Response Scale	Level
Work Intrusion Frequency		Total number of unexpected work intrusions experienced during nonwork hours while in any nonwork location during study period		Person
Work Intrusion Context	Timing	Early Morning Work Intrusion	0 = no, 1 = yes	Episode
Work Intrusion Context	Timing	Evening Work Intrusion	0 = no, 1 = yes	Episode
Work Intrusion Context	Company	Not Alone	0 = no, 1 = yes	Episode
Work Intrusion Context	Location	Work intrusion at home	0 = no, 1 = yes	Episode
Work Intrusion Context	Activity	Leisure activity	0 = no, 1 = yes	Episode
Work Intrusion Context	Activity	Transitioning between roles	0 = no, 1 = yes	Episode
Work Intrusion Context	Source	Boss	0 = no, 1 = yes	Episode
Work Intrusion Context	Type	Telephone call	0 = no, 1 = yes	Episode
Work Intrusion Context	Nature	Request for help	0 = no, 1 = yes	Episode
Work Intrusion Context	Nature	Emergency/complaint/demand/error	0 = no, 1 = yes	Episode
Work Intrusion Significance		Intrusion was...Necessary	1=not at all to 7=very much	Episode
Work Intrusion Significance		Intrusion was...Important	1=not at all to 7=very much	Episode
Work Intrusion Significance		Intrusion was...Something only you could address	1=not at all to 7=very much	Episode
Work Intrusion Pressure	Demand	A response on your part was...Demanded by the person causing the intrusion	1=not at all to 7=very much	Episode
Work Intrusion Pressure	Demand	A response on your part was...Expected by someone else other than the person causing the intrusion	1=not at all to 7=very much	Episode
Work Intrusion Pressure	Demand	A response on your part was...Demanded by someone else other than the person causing the intrusion	1=not at all to 7=very much	Episode
Work Intrusion Pressure	Source	Felt pressure to respond from: Yourself	1=not at all to 7=very much	Episode
Work Intrusion Pressure	Source	Felt pressure to respond from: The person causing the intrusion	1=not at all to 7=very much	Episode

Table 11

Maximum Likelihood Factor Analysis (Oblimin Rotation) for Unplanned Nonwork-to-Work Role Switching Scales

	Factor Loadings				
	Smartphone Response	Computer Response	Response Mental Disruption	Response Mental Effort	Automatic Response
Response to intrusion: Read an email or text message on your Smartphone	**.904**	.002	-.051	-.027	-.056
Response to intrusion: Replied to an email or text message on your Smartphone	**.975**	.010	-.048	-.040	-.053
Response to intrusion: Read an email by logging onto a computer or tablet	-.062	**.998**	.055	-.012	.060
Response to intrusion: Replied to an email by logging onto a computer or tablet	.063	**.852**	-.054	.009	.056
Responding was: Bothersome	.021	-.086	**.987**	-.125	-.074
Responding was: Disruptive to what you were doing at the time	-.128	.018	**.928**	-.034	-.040
Responding was: Mentally distracting	-.115	.014	**.755**	.178	-.043
Response was: Easy	.029	.070	.250	**-.577**	-.513
Response was: Challenging	-.001	.072	.216	**.717**	-.238
Response was: Immediate	-.057	.003	-.008	.038	**.769**
Response was: Automatic	-.020	.170	-.042	-.017	**.415**
Response to intrusion: Listened to a voicemail	-.010	-.029	-.151	.500	.037
Response to intrusion: Thought about it	.231	.027	.321	.122	.229
Response to intrusion: Answered a phone call	-.141	-.243	.091	.052	.339

	Factor Loadings				
	Smartphone Response	Computer Response	Response Mental Disruption	Response Mental Effort	Automatic Response
Response to intrusion: Made a phone call	.019	-.042	.157	.256	.116
Response to intrusion: Did other work tasks not involving emails or phone calls	-.165	-.043	.087	.343	.048
Response required mental effort	.040	.136	.346	.495	.130

Note. Values represent pattern matrix coefficients. Numbers in boldface indicate dominant factor loadings. If there is no number in boldface, then the item did not have a dominant factor loading and was not retained. Although the item, "Response to intrusion: Listened to a voicemail," did load onto the Response Difficultly factor, it was not retained due to a lack of conceptual fit.

Table 12

Alternative Measurement Models for Multidimensional Measure of Unplanned Nonwork-to-Work Role Switching Mental Difficulty

						RMSEA 90% CI	
Model	*df*	χ^2 (N = 55)	χ^2/df	CFI	SRMR	RMSEA	Lower	Upper
Model 1	4	5.54	1.39	.99	.04	.08	.00	.24
Model 2	5	25.05	5.01	.89	.11	.26	.16	.38

Note. Model 1 is a two-factor model with the response mental disruption factor and the response mental effort factor. Model 2 is a one-factor model of unplanned nonwork-to-work role switching mental difficulty combining the mental disruption and mental effort factors. CFI = comparative fit index; SRMR = standardized root mean-square residual; RMSEA = root mean-square error of approximation; CI = confidence interval.

Table 13

Final Unplanned Nonwork-to-Work Role Switching Measurement Scales

Variable	Dimension	Item	Response Scale	Level
Unplanned Nonwork-to-Work Role Switching Response		Did you react to this intrusion in any way?	0=no, 1= yes	Episode
Unplanned Nonwork-to-Work Role Switching Frequency		Sum of intrusion reactions during daily study period		Person
Unplanned Nonwork-to-Work Role Switching Length		About how much personal time did you spend today responding to this particular intrusion	open-ended (minutes)	Episode
Unplanned Nonwork-to-Work Role Switching Mental Difficulty	Disruption	Responding was: Bothersome	1=not at all to 7=very much	Episode
	Disruption	Responding was: Disruptive to what you were doing at the time	1=not at all to 7=very much	Episode
	Disruption	Responding was: Mentally distracting	1=not at all to 7=very much	Episode
	Effort	Response was: Easy	1=not at all to 7=very much	Episode
	Effort	Response was: Challenging	1=not at all to 7=very much	Episode
Unplanned Nonwork-to-Work Role Switching Physical Effort		Response required physical effort	1=not at all to 7=very much	Episode
Response Type	Smartphone Email	Response to intrusion: Read an email or text message on your Smartphone	0 = no, 1= yes	Episode

Variable	Dimension	Item	Response Scale	Level
	Smartphone Email	Response to intrusion: Replied to an email or text message on your Smartphone	0 = no, 1= yes	Episode
Response Type	Computer Email	Response to intrusion: Read an email by logging onto a computer or tablet (e.g., iPad)	0 = no, 1= yes	Episode
	Computer Email	Response to intrusion: Replied to an email by logging onto a computer or tablet (e.g., iPad)	0 = no, 1= yes	Episode

Table 14

Alternative Measurement Models for Discriminant Validity between Unplanned Nonwork-to-Work Role Switching Mental Difficulty and Integration Boundary Management Strategy

							RMSEA 90% CI	
Model	*df*	χ^2 (N = 55)	χ^2/df	CFI	SRMR	RMSEA	Lower	Upper
Model 1	41	65.76	1.60	.89	.09	.09	.00	.14
Model 2	44	111.94	2.54	.71	.14	.17	.13	.21

Note. Model 1 is a three-factor model for integration boundary management strategy and the two dimensions of unplanned nonwork-to-work role switching difficulty. Model 2 is a one-factor model for integration boundary management strategy and the two dimensions of unplanned nonwork-to-work role switching difficulty. CFI = comparative fit index; SRMR = standardized root mean-square residual; RMSEA = root mean-square error of approximation; CI = confidence interval.

Table 15

Alternative Measurement Models for Discriminant Validity between Unplanned Nonwork-to-Work Role Switching Mental Difficulty and Home Boundary Strength

							RMSEA 90% CI	
Model	*df*	χ^2 (N = 55)	χ^2/df	CFI	SRMR	RMSEA	Lower	Upper
Model 1	87	128.59	1.48	.92	.09	.03	.00	.09
Model 2	90	356.39	3.96	.51	.27	.30	.27	.32

Note. Model 1 is a three-factor model for home boundary strength and the two dimensions of unplanned nonwork-to-work role switching difficulty. Model 2 is a one-factor model for home boundary strength and the two dimensions of unplanned nonwork-to-work role switching difficulty. CFI = comparative fit index; SRMR = standardized root mean-square residual; RMSEA = root mean-square error of approximation; CI = confidence interval.

Table 16

Alternative Measurement Models for Discriminant Validity between Unplanned Nonwork-to-Work Role Switching Mental Difficulty and Nonwork Permeability

							RMSEA 90% CI	
Model	*df*	χ^2 (N = 55)	χ^2/df	CFI	SRMR	RMSEA	Lower	Upper
Model 1	62	84.27	1.36	.95	.10	.07	.00	.08
Model 2	65	280.98	4.32	.55	.26	.31	.28	.34

Note. Model 1 is a three-factor model for nonwork permeability and the two dimensions of unplanned nonwork-to-work role switching difficulty. Model 2 is a one-factor model for nonwork permeability and the two dimensions of unplanned nonwork-to-work role switching difficulty. CFI = comparative fit index; SRMR = standardized root mean-square residual; RMSEA = root mean-square error of approximation; CI = confidence interval.

Table 17a

Means, Standard Deviations, Reliability, and Correlations at the Episode Level (Level 1)

Variable	*M*	*SD*	α	1	2	3	4	5	6
1. AM Intrusion	1.11	.32	-						
2. Evening Intrusion	.08	.27	-	-.20*					
3. Someone Present	.33	.47	-	.04	.24**				
4. Home Location	.63	.48	-	.06	.26**	.51**			
5. Leisure Activity	.59	.49	-	-.19*	.14	.07	.40**		
6. Boss as Source	.08	.28	-	.13	-.07	.11	-.08	-.02	
7. Telephone Intrusion	.22	.42	-	.00	.06	-.05	.04	.05	.02
8. Request for Help	.60	.49	-	-.09	.04	.04	.16	.03	.06
9. Emergency	.23	.42	-	-.01	.07	.16	.09	-.03	.06
10. Intrusion Significance	.11	.31	.91	.14	-.12	.13	.14	.03	.00
11. Intrusion Pressure	4.09	1.80	.86	-.08	.04	-.08	-.12	-.18*	-.03
12. Role Switch Response	.76	.43	-	.03	-.05	.08	.00	-.10	.09
13. Role Switch Length	50	136	-	-.11	-.10	-.27**	-.29**	-.16	-.01
14. Role Switch Ment. Diff.	3.60	1.56	.88	.08	.05	.02	-.14	-.10	-.01
15. Role Switch Phy. Eff.	2.61	1.84	-	.13	-.03	-.21*	-.13	-.04	.15
16. Negative Affect	2.44	1.46	.96	.12	.13	-.01	.00	.03	-.07

Note. Cronbach's alpha for episode-level variables are mean internal consistencies averaged over all episodes (not provided for one-item measures). N=132 for all episode-level correlations except for correlations with role switching variables 14 through 22 (N = 100). For variables 1 through 10 and variables 14 through 18, 0 = no, 1 = yes. Role Switching Length is in minutes. AM Intrusion = Early Morning Intrusion. Role Switch Ment. Diff. = Role Switch Mental Difficulty. Role Switch Phy. Eff. = Role Switch Physical Effort

Table 17a continued

Means, Standard Deviations, Reliability, and Correlations at the Episode Level (Level 1)

Variable	7	8	9	10	11	12	13	14	15
1. AM Intrusion									
2. Evening Intrusion									
3. Someone Present									
4. Home Location									
5. Leisure Activity									
6. Boss as Source									
7. Telephone Intrusion									
8. Request for Help	.26**								
9. Emergency	-.02	-.19*							
10. Intrusion Significance	.00	.10	-.01						
11. Intrusion Pressure	.15	.19*	.19*	.30**					
12. Role Switch Response	-.07	.14	-.04	.28**	.25**				
13. Role Switch Length	-.13	-.09	.03	.13	.32**	-			
14. Role Switch Ment. Diff.	.07	-.05	.22*	-.16	.54**	-	.23*		
15. Role Switch Phy. Eff.	.20	.25*	.12	.19	.43**	-	.29**	.34**	
16. Negative Affect	.19	.11	.12	.01	.53**	-	.17	.65**	.48**

Note. Cronbach's alpha for episode-level variables are mean internal consistencies averaged over all episodes (not provided for one-item measures). N=132 for all episode-level correlations except for correlations with role switching variables 14 through 22 (N = 100). For variables 1 through 10 and variables 14 through 18, 0 = no, 1 = yes. Role Switching Length is in minutes. AM Intrusion = Early Morning Intrusion. Role Switch Ment. Diff. = Role Switch Mental Difficulty. Role Switch Phy. Eff. = Role Switch Physical Effort

Table 17b

Means, Standard Deviations, Reliability, and Correlations at the Person Level (Level 2)

Variable	*M*	*SD*	α	1	2	3	4	5	6	7	8	9	10	11
1. Intrusion Signif.	.11	.31	.91											
2. Intrusion Pressure	4.09	1.80	.86	.29										
3. Role Switch Response	.76	.43	-	.41**	.19									
4. Role Switch Length	50.00	136	-	.17	.28*	-								
5. Role Switch Diff.	3.60	1.56	.88	-.25	.47**	-	.25							
6. Role Switch Phy. Eff.	2.61	1.84	-	.16	.37**	-	.13	.22						
7. Negative Affect	2.44	1.46	.96	.01	.54**	.05	.30*	.70**	.33*					
8. Intrusion Freq.	2.35	1.87	-	.10	.15	.08	.38**	.18	.07	.34**				
9. Role Switch Freq.	1.47	1.20	-	.22	.19	.56**	.40**	.16	.07	.29*	.79**			
10. Work Overload	2.92	1.24	.93	-.05	.31**	.01	.17	.60**	.10	.45**	.31**	.20		
11. Job Flexibility	3.75	1.37	.80	.33**	.11	.24*	.12	-.05	.04	-.03	.05	.17	.10	
12. Job Insecurity	3.44	1.51	.80	-.17	-.03	.05	-.05	.15	-.13	.19	-.11	-.06	.17	-.31**
13. Integrat. Strategy	3.55	.95	.54	.02	.16	.04	-.09	-.06	.27	.00	.08	.14	.05	.15
14. Work Role ID	3.90	1.02	.82	.10	.03	-.14	.08	-.02	.30*	.05	.18	.03	.16	.25*
15. Family Role ID	5.97	.92	.91	.02	-.05	.07	-.07	.00	-.16	-.08	-.14	.00	.02	.05
16. Personal Role ID	4.97	.99	.85	-.03	-.04	.03	-.09	-.06	.11	-.15	-.06	.01	-.06	-.04
17. Conscien.	5.48	.93	.89	.01	.18	.05	-.02	.20	.00	.14	-.05	.06	.06	-.01
18. Mindful.	4.44	.98	.88	.26*	-.01	.13	.08	-.17	-.15	-.36**	-.05	.00	-.24*	.02
19. OBSE	5.86	1.01	.94	.30*	.04	.04	.20	-.19	-.08	-.14	.04	.00	-.03	.33**
20. WHI	3.56	1.37	.90	-.12	.07	.03	-.10	.37**	.07	.33**	.28*	.21	.44**	.14
21. Burnout	3.72	.97	.90	-.39**	-.06	-.01	-.10	.34*	.04	.31**	.11	.13	.28*	-.19
22. Physical Health	2.81	1.28	.93	-.23	-.02	.00	.18	.24	.03	.30*	.41**	.36**	.23	-.14
23. Gender	.57	.50	-	-.13	-.10	.02	.09	.09	-.03	.12	.21	.19	.11	-.26*
24. Children	.25	.44	-	.00	.16	-.07	.25	.36**	.16	.06	.00	-.03	.12	.19
25. Work Hours	42.32	9.53	-	-.17	.19	-.01	-.04	.23	-.22	.22	.37**	.22	.25*	.04
26. Tenure	4.65	1.34	-	.03	.13	.08	-.22	.23	-.04	.14	-.09	-.02	.27*	-.19
27. Neurotic.	3.07	1.06	.86	-.22	-.08	-.15	-.24	.08	.14	.21	-.04	-.10	-.04	-.17
28. Daily Hassles	6.20	1.06	.77	.06	.13	-.02	.20	.16	.08	.36**	.20	.19	.09	-.13

Note. Cronbach's alpha for episode-level variables are mean internal consistencies averaged over all episodes (not provided for one-item measures). N=68 for all person-level correlations except for correlations with role switching variables 3 through 6 (N = 55). Role Switching Length is in minutes. For Gender, Male = 0 and Female = 1. For Children, No Children Under 5 = 0 and Children Under 5 = 1. Daily Hassles are the sum of the number of events and the mean severity across all events. Intrusion Signif. = Intrusion Significance. Role Switch Phy. Eff. = Role Switch Physical Effort. Integrat. Strategy = Integration Strategy. Conscien. = Conscientiousness. OBSE = Organization-Based Self-Esteem. WHI = Work-to-Nonwork Interference.

Table 17b continued

Means, Standard Deviations, Reliability, and Correlations at the Person Level (Level 2)

Variable	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
1. Intrusion Signif.																
2. Intrusion Pressure																
3. Role Switch Response																
4. Role Switch Length																
5. Role Switch Ment. Diff.																
6. Role Switch Phy. Eff.																
7. Negative Affect																
8. Intrusion Freq.																
9. Role Switch Freq.																
10. Work Overload																
11. Job Flexibility																
12. Job Insecurity																
13. Integrat. Strategy	-.23															
14. Work Role ID	-.25*	.16														
15. Family Role ID	-.14	-.02	-.25*													
16. Personal Role ID	-.31**	.23	-.04	.35**												
17. Conscien.	-.21	-.01	-.06	.51**	.18											
18. Mindful.	-.17	-.09	.01	.34**	.06	.46**										
19. OBSE	-.54**	.02	.24*	.25*	.07	.28*	.45**									
20. WHI	.13	-.03	-.04	.01	.13	-.06	-.35**	-.20								
21. Burnout	.29*	-.03	-.34**	.04	.07	-.09	-.48**	-.50**	.62**							
22. Physical Health	-.02	.00	.04	-.06	.04	-.12	-.33**	-.10	.44**	.41**						
23. Gender	-.12	.10	-.03	.20	.03	.08	-.01	.10	.06	.14	.33**					
24. Children	.10	-.12	.16	-.08	.11	.04	-.10	-.15	.08	.07	-.07	-.33**				
25. Work Hours	.12	.05	.10	-.20	-.13	.03	-.14	-.11	.25*	.16	.13	-.11	.11			
26. Tenure	.19	.16	-.14	.40**	.15	.25*	.11	.06	.01	.10	-.03	.06	-.18	-.16		
27. Neurotic.	.30*	-.02	-.12	-.32**	-.23	-.24*	-.42**	-.53**	.18	.37**	.18	-.07	-.01	.04	-.06	
28. Daily Hassles	-.05	-.10	-.21	.11	-.07	.12	-.03	.11	-.04	.16	.28*	.47**	-.19	-.02	-.06	.01

Note. Cronbach's alpha for episode-level variables are mean internal consistencies averaged over all episodes (not provided for one-item measures). N=68 for all person-level correlations except for correlations with role switching variables 3 through 6 (N = 55). Role Switching Length is in minutes. For Gender, Male = 0 and Female = 1. For Children, No Children Under 5 = 0 and Children Under 5 = 1. Daily Hassles are the sum of the number of events and the mean severity across all events. Intrusion Signif. = Intrusion Significance. Role Switch Ment. Diff. = Role Switch Mental Difficulty. Role Switch Phy. Eff. = Role Switch Physical Effort. Integrat. Strategy = Integration Strategy. Conscien. = Conscientiousness. OBSE = Organization-Based Self-Esteem. WHI = Work-to-Nonwork Interference.

Table 18

Descriptive Results for Categorical Work Intrusion Variables

Variable	Category	%
Type of Day	Work Day	88
	Nonwork Day	12
Time of Intrusion	Early morning	9
	Morning	13
	Afternoon	31
	Early evening	16
	Evening	31
Present at Time of Intrusion	No one	36
	My significant other	48
	My children	7
	Other (other family members, friends, etc.)	9
Intrusion Nonwork Location	Home	59
	Car or other form of transportation	12
	Other nonwork location (restaurant, store, outdoors, etc.)	29
Nonwork Activity at Time of Intrusion	Leisure activity	52
	Nonwork task or domestic responsibility or child care	19
	Driving, leaving work, going to work	10
	Other (exercising, driving, getting ready for work or leaving work, etc.)	19
Source of Intrusion	Co-worker/colleague	49
	Boss/manager/supervisor	24
	Client/customer	10
	Other (subordinate, internal customer, etc.)	17
Type of Intrusion	Phone call, missed call, or voicemail	57
	Text message	9
	Email notification	16
	Other (e.g., in-person)	18
Nature of Intrusion	Question or request for information	39
	Request for help	26
	Complaint or demand or emergency	10
	Information or update	17
	Other (initiation to attend meeting, etc.)	8

Note. Values represent the percent of intrusions in a particular category.

Table 19

Multilevel Estimates for Exploratory Models Predicting Unplanned Nonwork-to-Work Role Switching Response with Level-1 Work Intrusion Variables

	Null Model		Model 1		Model 2	
Variables	Odds Ratio	*t-score*	Odds Ratio	*t-score*	Odds Ratio	*t-score*
Fixed Effects						
Intercept (γ_{00})	3.21***	*4.82*	3.25***	*4.77*	3.42***	*4.72*
Episode-Level Variables						
Intrusion Significance (γ_{10})			1.25	*1.34*		
Intrusion Pressure (γ_{20})					2.04*	*2.31*
Intercept Random Effect *(SE)* (μ_0)	.86 *(.93)*		.89 *(.95)*		1.08† *(1.04)*	

Note. N = 68 respondents. k = 132 work intrusion episodes. †$p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$.

Table 20

Multilevel Estimates for Models Predicting Unplanned Nonwork-to-Work Role Switching Response with Level-2 Job Antecedents

	Null Model		Model 1		Model 2		Model 3		Model 4	
Variables	Odds Ratio	*t-score*	Odds Ratio	*t-score*	Odds Ratio	*t-score*	Odds Ratio	*t-score*	Odds Ratio	*t-score*
Fixed Effects										
Intercept (γ_{00})	3.21***	*4.82*	3.42***	*4.72*	3.42***	*4.66*	3.65***	*4.81*	3.44***	*4.68*
Episode-Level Variables										
Intrusion Pressure (γ_{10})			2.04*	*2.31*	2.06*	*2.32*	2.12*	*2.37*	2.05*	*2.32*
Person-Level Job Antecedents										
Work Role Overload (γ_{01})					1.05	*.24*				
Job Flexibility(γ_{02})							1.55*	*2.17*		
Job Insecurity(γ_{03})									1.04	*.22*
Intercept Random Effect *(SE)* (μ_0)	.86 *(.93)*		1.08† *(1.04)*		1.15† *(1.07)*		1.00 *(1.00)*		1.16† *(1.08)*	

Note. N = 68 respondents. k = 132 unplanned nonwork-to-work role switching episodes. †$p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$.

Table 21

Multilevel Estimates for Models Predicting Unplanned Nonwork-to-Work Role Switching Response with Level-2 Individual Antecedents

	Null Model		Model 1		Model 2		Model 3		Model 4		Model 5	
Variables	Odds Ratio	*t-score*	Odds Ratio	*t-score*	Odds Ratio	*t-score*	Odds Ratio	*t-score*	Odds Ratio	*t-score*	Odds Ratio	*t-score*
Fixed Effects												
Intercept (γ_{00})	3.21***	*4.82*	3.42***	*4.72*	3.42***	*4.69*	3.58***	*4.73*	3.47***	*4.70*	3.44***	*4.68*
Episode-Level Variables												
Intrusion Pressure (γ_{10})			2.04*	*2.31*	2.06*	*2.32*	2.07*	*2.33*	2.05*	*2.31*	2.04*	*2.31*
Person-Level Antecedents												
Integration Strategy (γ_{01})					1.20	*.61*						
Work Role Identification (γ_{02})							.71	*-1.28*				
Family Role Identification (γ_{03})									1.21	*.67*		
Personal Role Identification (γ_{04})											1.07	*.23*
Intercept Random Effect *(SE)* (μ_0)	.86 *(.93)*		1.08† *(1.04)*		1.12† *(1.06)*		1.14† *(1.07)*		1.15† *(1.07)*		1.17† *(1.07)*	

Note. N = 68 respondents. k = 132 unplanned nonwork-to-work role switching episodes. †$p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$.

Table 22

Multilevel Estimates for Models Predicting Unplanned Nonwork-to-Work Role Switching Response with Level-2 Personality Antecedents

	Null Model		Model 1		Model 2		Model 3		Model 4	
Variables	Odds Ratio	*t-score*	Odds Ratio	*t-score*	Odds Ratio	*t-score*	Odds Ratio	*t-score*	Odds Ratio	*t-score*
Fixed Effects										
Intercept (γ_{00})	3.21***	*4.82*	3.42***	*4.72*	3.47***	*4.78*	3.46***	*4.67*	3.44***	*4.68*
Episode-Level Variables										
Intrusion Pressure (γ_{10})			2.04*	*2.31*	2.07*	*2.33*	2.05*	*2.32*	2.05*	*2.32*
Person-Level Antecedents										
Conscientiousness (γ_{01})					1.32	*.95*				
Mindfulness (γ_{02})							1.12	*.41*		
OBSE (γ_{03})									1.00	*-.01*
Intercept Random Effect *(SE)* (μ_0)	.86 *(.93)*		1.08† *(1.04)*		1.06† *(1.03)*		1.21 *(1.10)*		1.16† *(1.08)*	

Note. N = 68 respondents. k = 132 unplanned nonwork-to-work role switching episodes. †$p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$.

Table 23

Multilevel Estimates for Models Predicting Unplanned Nonwork-to-Work Role Switching Response with Level-2 Participant Characteristics Antecedents

	Null Model		Model 1		Model 2		Model 3		Model 4	
Variables	Odds Ratio	*t-score*	Odds Ratio	*t-score*	Odds Ratio	*t-score*	Odds Ratio	*t-score*	Odds Ratio	*t-score*
Fixed Effects										
Intercept (γ_{00})	3.21***	*4.82*	3.42***	*4.72*	3.42***	*4.65*	3.43***	*4.64*	3.46***	*4.68*
Episode-Level Variables										
Intrusion Pressure (γ_{10})			2.04*	*2.31*	2.06*	*2.32*	2.05*	*2.32*	2.06*	*2.32*
Person-Level Antecedents										
Female (γ_{01})					1.22	*.37*				
Total Work Hours (γ_{02})							1.00	*.07*		
Organizational Tenure (γ_{03})									1.11	*.51*
Intercept Random Effect *(SE)* (μ_0)	.86 *(.93)*		1.08† *(1.04)*		1.16† *(1.08)*		1.17† *(1.08)*		1.17† *(1.08)*	

Note. N = 68 respondents. k = 132 unplanned nonwork-to-work role switching episodes. †$p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$

Table 24

Multilevel Estimates for Exploratory Models Predicting Unplanned Nonwork-to-Work Role Switching Mental Difficulty with Level-1Variables

	Null Model			Model 1			Model 2			Model 3		
Variables	Estimate	*SE*	*t*	Estimate	*SE*	*t*	Estimate	*SE*	*t*	Estimate	*SE*	*t*
Fixed Effects												
Intercept (γ_{00})	3.48***	*.20*	*17.34*	3.49***	*.20*	*17.34*	3.48***	*.20*	*17.34*	3.48***	*.20*	*17.32*
Episode-Level Variables												
Intrusion Emergency (γ_{10})				-.45	*.48*	*-.93*						
Intrusion Significance (γ_{20})							.26†	*.14*	*1.95*			
Instruion Pressure (γ_{30})										.49***	*.12*	*4.13*
Intercept Random Effect *(SE)* (μ_0)	1.70*** *(1.31)*			1.71*** *(1.30)*			1.73*** *(1.31)*			1.83*** *(1.35)*		

Note. N = 55 respondents. k = 100 work intrusion episodes. †$p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$

Table 25

Multilevel Estimates for Exploratory Models Predicting Unplanned Nonwork-to-Work Role Switching Mental Difficulty with Job Antecedents

	Null Model			Model 1			Model 2			Model 3		
Variables	Estimate	*SE*	*t*	Estimate	*SE*	*t*	Estimate	*SE*	*t*	Estimate	*SE*	*t*
Fixed Effects												
Intercept (γ_{00})	3.48***	*.20*	*17.34*	3.48***	*.20*	*17.32*	3.47***	*.17*	*20.54*	3.48***	*.20*	*17.17*
Episode-Level Variables												
Instruion Pressure (γ_{10})				.49***	*.12*	*4.13*	.49***	*.12*	*4.25*	.49***	*.12*	*4.13*
Person-Level Antecedents												
Work Role Overload (γ_{01})							.66***	*.13*	*5.07*			
Job Flexibility(γ_{02})										-.04	*.16*	*-.26*
Intercept Random Effect *(SE)* (μ_0)	1.70*** *(1.31)*			1.83*** *(1.35)*			1.20*** *(1.10)*			1.87*** *(1.37)*		

Note. N = 55 respondents. k = 100 work intrusion episodes. †$p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$

Table 26

Multilevel Estimates for Exploratory Models Predicting Unplanned Nonwork-to-Work Role Switching Difficulty with Individual Antecedents

	Null Model			Model 1			Model 2			Model 3			Model 4			Model 5		
Variables	Estimate	*SE*	*t*	Estimate	*SE*	*t*	Estimate	*SE*	*t*	Estimate	*SE*	*t*	Estimate	*SE*	*t*	Estimate	*SE*	*t*
Fixed Effects																		
Intercept (γ_{00})	3.48***	*.20*	*17.34*	3.48***	*.20*	*17.32*	3.48***	*.20*	*17.53*	3.48***	*.20*	*17.17*	3.48***	*.20*	*17.16*	3.48***	*.20*	*17.20*
Episode-Level Variables																		
Intrusion Pressure (γ_{10})				.49***	*.12*	*4.13*	.49***	*.12*	*4.58*	.49***	*.12*	*4.13*	.49***	*.12*	*4.13*	.49***	*.12*	*4.13*
Person-Level Variables																		
Integrat. Strategy (γ_{01})							-.11	*.21*	*-.58*									
Work Role ID (γ_{02})										-.04	*.20*	*-.19*						
Family Role ID (γ_{03})													.01	*.25*	*.04*			
Personal Role ID (γ_{04})																-.09	*.20*	*-.46*
Intercept Random Effect *(SE)* (μ_0)	1.70*** *(1.31)*			1.83*** *(1.35)*			1.86*** *(1.36)*			1.87*** *(1.37)*			1.87*** *(1.37)*			1.86*** *(1.36)*		

Note. N = 55 respondents. k = 100 work intrusion episodes. †$p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$. Integrat. = Integration. ID = Identification.

Table 27

Multilevel Estimates for Exploratory Models Predicting Unplanned Nonwork-to-Work Role Switching Mental Difficulty with Personality Antecedents

	Null Model			Model 1			Model 2			Model 3			Model 4		
Variables	Estimate	*SE*	*t*	Estimate	*SE*	*t*	Estimate	*SE*	*t*	Estimate	*SE*	*t*	Estimate	*SE*	*t*
Fixed Effects															
Intercept (γ_{00})	3.48***	*.20*	*17.34*	3.48***	*.20*	*17.32*	3.47***	*.20*	*17.41*	3.47***	*.20*	*17.40*	3.47***	*.20*	*17.52*
Episode-Level Variables															
Intrusion Pressure (γ_{10})				.49***	*.12*	*4.13*	.49***	*.12*	*4.14*	.49***	*.12*	*4.14*	.49***	*.12*	*4.13*
Person-Level Antecedents															
Conscientious-ness (γ_{01})							.30	*.22*	*1.34*						
Mindfulness (γ_{02})										-.25	*.20*	*-1.28*			
OBSE (γ_{03})													-.31	*.21*	*-1.50*
Intercept Random Effect *(SE)* (μ_0)	1.70*** *(1.31)*			1.83*** *(1.35)*			1.80*** *(1.34)*			1.81*** *(1.34)*			1.78*** *(1.33)*		

Note. N = 55 respondents. k = 100 work intrusion episodes. †$p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$

Table 28

Multilevel Estimates for Exploratory Models Predicting Unplanned Nonwork-to-Work Role Switching Mental Difficulty with Participant Characteristics Antecedents

	Null Model			Model 1			Model 2			Model 3			Model 4		
Variables	Estimate	*SE*	*t*	Estimate	*SE*	*t*	Estimate	*SE*	*t*	Estimate	*SE*	*t*	Estimate	*SE*	*t*
Fixed Effects															
Intercept (γ_{00})	3.48***	*.20*	*17.34*	3.48***	*.20*	*17.32*	3.47***	*.20*	*17.19*	3.47***	*.20*	*17.69*	3.48***	*.19*	*18.24*
Episode-Level Variables															
Intrusion Pressure (γ_{10})				.49***	*.12*	*4.13*	.49***	*.12*	*4.14*	.49***	*.12*	*4.12*	.49***	*.12*	*4.16*
Person-Level Antecedents															
Female (γ_{01})							.24	*.41*	*.59*						
Total Work Hours (γ_{02})										.04†	*.02*	*1.78*			
Children under 5 (γ_{03})													1.22**	*.45*	*2.72*
Intercept Random Effect *(SE)* (μ_0)	1.70*** *(1.31)*			1.83*** *(1.35)*			1.86*** *(1.37)*			1.73*** *(1.32)*			1.62*** *(1.27)*		

Note. N = 55 respondents. k = 100 work intrusion episodes. †$p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$

Table 29

Multilevel Estimates for Exploratory Models Predicting Unplanned Nonwork-to-Work Role Switching Physical Effort with Level-1Variables

	Null Model			Model 1			Model 2			Model 3			Model 4		
Variables	Estimate	*SE*	*t*	Estimate	*SE*	*t*	Estimate	*SE*	*t*	Estimate	*SE*	*t*	Estimate	*SE*	*t*
Fixed Effects															
Intercept (γ_{00})	2.61***	*.24*	*10.77*	2.61***	*.24*	*10.77*	2.61***	*.24*	*10.76*	2.61***	*.24*	*10.71*	2.61***	*.24*	*10.73*
Episode-Level Variables															
Someone Present (γ_{10})				-.09	*.40*	-*.22*									
Request for Help (γ_{20})							.58†	*.32*	*1.78*						
Intrusion Signif. (γ_{30})										.49***	*.14*	*3.67*			
Intrusion Pressure (γ_{40})													.42**	*.14*	*3.05*
Intercept Random Effect *(SE)* (μ_0)	2.62*** *(1.63)*			2.60*** *(1.61)*			2.65*** *(1.63)*			2.78*** *(1.69)*			2.74*** *(1.65)*		

Note. N = 55 respondents. k = 100 work intrusion episodes. †p < .10, *p < .05, **p < .01, ***p < .001. Intrusion Signif. = Intrusion Significance

Table 30

Multilevel Estimates for Models Predicting Unplanned Nonwork-to-Work Role Switching Physical Effort with Job Antecedents

	Null Model			Model 1			Model 2			Model 3		
Variables	Estimate	*SE*	*t*	Estimate	*SE*	*t*	Estimate	*SE*	*t*	Estimate	*SE*	*t*
Fixed Effects												
Intercept (γ_{00})	2.61***	*.24*	*10.77*	2.61***	*.24*	*10.70*	2.61***	*.25*	*10.77*	2.61***	*.25*	*10.77*
Episode-Level Variables												
Instruion Significance (γ_{10})				.38**	*.14*	*2.74*	.38**	*.14*	*2.74*	.38**	*.14*	*2.74*
Instruion Pressure (γ_{20})				.27†	*.14*	*1.97*	.27†	*.14*	*1.97*	.27†	*.14*	*1.97*
Person-Level Antecedents												
Work Role Overload (γ_{01})							.14	*.19*	*.74*			
Job Flexibility (γ_{02})										.06	*.19*	*.31*
Intercept Random Effect *(SE)* (μ_0)	2.62*** *(1.63)*			2.82*** *(1.68)*			2.85*** *(1.69)*			2.88*** *(1.70)*		

Note. N = 55 respondents. k = 100 work intrusion episodes. †$p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$

Table 31

Multilevel Estimates for Exploratory Models Predicting Unplanned Nonwork-to-Work Role Switching Physical Effort with Individual Antecedents

	Null Model			Model 1			Model 2			Model 3		
Variables	Estimate	*SE*	*t*	Estimate	*SE*	*t*	Estimate	*SE*	*t*	Estimate	*SE*	*t*
Fixed Effects												
Intercept (γ_{00})	2.61***	*.24*	*10.77*	2.61***	*.24*	*10.70*	2.61***	*.24*	*10.98*	2.61***	*.23*	*11.18*
Episode-Level Variables												
Intrusion Significance (γ_{10})				.38**	*.14*	*2.74*	.38**	*.14*	*2.74*	.38**	*.14*	*2.73*
Intrusion Pressure (γ_{20})				.27†	*.14*	*1.97*	.27†	*.14*	*1.97*	.27†	*.14*	*1.96*
Person-Level Antecedents												
Integration Strategy (γ_{01})							.49*	*.24*	*2.02*			
Work Role Identification (γ_{02})										.56*	*.23*	*2.38*
Intercept Random Effect *(SE)* (μ_0)	2.62*** *(1.63)*			2.82*** *(1.68)*			2.64*** *(1.63)*			2.54*** *(1.59)*		

Note. N = 55 respondents. k = 100 work intrusion episodes. †$p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$

Table 32

Summary of HLM Results for Unplanned Nonwork-to-Work Role Switching Response, Mental Difficulty, Physical Effort, and Negative Affect

Outcome		Antecedent				Correlation		HLM/HLGM		
Variable	Level	Type	Level	Test	Variable	Result	Direction	Result	Direction (Υ^2)	Results Summary
Response	Episode	Context	Episode	Exploratory	All contextual variables	ns				
		Intrusion	Episode	Exploratory	Intrusion Significance	significant	positive	ns		
					Intrusion Pressure	significant	positive	marginal	positive	Consistent
					Other intrusion variables	ns				
		Job	Person	H1a	Work Role Overload	significant	positive	ns		
				H2a	Job Flexibility	ns		significant	positive	
				H3	Job Insecurity	ns		ns		
		Individual	Person	H5a	Work Role Identification	ns		ns		
				H5c	Nonwork Role Identification	ns		ns		
				H6a	Integration Strategy	ns		ns		
				H7a	Conscientiousness	ns		ns		
				H8a	Mindfulness	ns		ns		
				H9a	OBSE	ns		ns		
		Demo	Person	H10a	Female	ns		ns		
				H11a	Work Hours	ns		ns		
				H12	Organizational Tenure	ns		ns		
Mental Difficulty	Episode	Context	Episode	Exploratory	All contextual variables	ns				
		Intrusion	Episode	Exploratory	Emergency	significant	positive	ns		
					Intrusion Significance	ns		marginal	positive	
					Intrusion Pressure	significant	positive	significant	positive	Consistent

Outcome		Antecedent				Correlation		HLM/HLGM		
Variable	Level	Type	Level	Test	Variable	Result	Direction	Result	Direction (Υ^2)	Results Summary
					Other intrusion variables	ns				
		Job	Person	H1b	Work Role Overload	ns		significant	positive (.07)	
				H2b	Job Flexibility	ns		ns		
		Individual	Person	H5b	Work Role Identification	ns		ns		
				H5d	Nonwork Role Identification	ns		ns		
				H6b	Integration Strategy	ns		ns		
				H7b	Conscientiousness	ns		ns		
				H8b	Mindfulness	ns		ns		
				H9b	OBSE	ns		ns		
		Demo	Person	H10b	Female	ns		ns		
				H11b	Work Hours	ns		marginal	positive (.01)	
				Exploratory	Children under 5	significant	positive	significant	positive (.02)	Consistent
Physical Effort	Episode	Context	Episode	Exploratory	Someone Present	significant	positive	ns		
					Other contextual variables	ns				
		Intrusion	Episode	Exploratory	Request for Help	significant	positive	marginal	positive	Consistent
					Intrusion Significance	ns		significant	positive	
					Intrusion Pressure	significant	positive	significant	positive	Consistent
					Other intrusion variables	ns				
		Job	Person	Exploratory	Work Role Overload	ns				
					Job Flexibility	ns				
		Individual	Person	Exploratory	Integration Strategy	ns		significant	positive (.00)	
					Work Role Identification	significant	positive	significant	positive (.01)	Consistent

Outcome		Antecedent				Correlation		HLM/HLGM		
Variable	Level	Type	Level	Test	Variable	Result	Direction	Result	Direction (Υ^2)	Results Summary
					Conscientiousness	ns				
					OBSE	ns				
					Other individual variables	ns				
		Demo	Person	Exploratory	Female	ns				
					Work Hours	ns				
Negative Affect	Episode	Context	Episode	Exploratory	All contextual variables	ns				
		Intrusion	Episode	Exploratory	Intrusion Pressure	significant	positive	significant	positive	Consistent
					Other intrusion variables	ns				
		Response	Episode	RQ1	Unplanned response	ns		ns		
				Exploratory	Response difficulty	significant	positive	significant	positive	Consistent
					Response physical effort	significant	positive	significant	positive	Consistent
					Response length	significant	positive	ns		

Note. For all exploratory analyses, if the correlation results were not significant, then the relationship was not tested with HLM unless there was theoretical justification.

Table 33

Multilevel Estimates for Exploratory Models Predicting Negative Affect with Level-1 Intrusion Variables

	Null Model			Model 1			Model 2		
Variables	Estimate	*SE*	*t*	Estimate	*SE*	*t*	Estimate	*SE*	*t*
Fixed Effects									
Intercept (γ_{00})	2.26***	*.15*	*14.64*	2.26***	*.15*	*14.70*	2.26***	*.15*	*14.63*
Episode-Level Variables									
Intrusion Pressure (γ_{10})				.31***	*.10*	*2.98*			
Unplanned Response (γ_{20})							.12	*.31*	*.38*
Intercept Random Effect *(SE)* (μ_0)		1.24 *(1.11)*			1.15*** *(1.07)*			1.12*** *(1.06)*	

Note. N = 68 respondents. k = 132 work intrusion episodes. †$p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$.

Table 34

Multilevel Estimates for Exploratory Models Predicting Negative Affect with Level-1 Antecedents with Level-1 Role Switching Variables

	Null Model			Model 1			Model 2			Model 3		
Variables	Estimate	*SE*	*t*	Estimate	*SE*	*t*	Estimate	*SE*	*t*	Estimate	*SE*	*t*
Fixed Effects												
Intercept (γ_{00})	2.33***	*.18*	*12.94*	2.31***	*.18*	*13.08*	2.33***	*.18*	*13.03*	2.33***	*.18*	*12.94*
Episode-Level Variables												
Role Switching Difficulty (γ_{10})				.60***	*.13*	*4.57*						
Role Switching Physical Effort (γ_{20})							.45***	*.13*	*3.48*			
Role Switching Length (γ_{30})										.00	*.00*	*1.01*
Intercept Random Effect *(SE)* (μ_0)	1.24 *(1.11)*			1.32*** *(1.15)*			1.29*** *(1.13)*			1.24 *(1.11)*		

Note. N = 55 respondents. k = 100 role switching episodes. †$p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$.

Table 35

Hierarchical Regression Analysis Predicting Work-to-Nonwork Interference with Unplanned Nonwork-to-Work Role Switching Variables

	(1)		(2)		(3)		(4)	
	Step	*Model*	*Step*	*Model*	*Step*	*Model*	*Step*	*Model*
Step 1								
Neuroticism	.30*	.26*	.30*	.18	.30*	.28*	.30*	.28*
Daily Hassles	-.23	-.22†	-.23	-.15	-.23	-.22	-.23	-.19
Female	.30*	.41*	.30*	.24	.30*	.26†	.30*	.30*
Total Weekly Work Hours	.43**	.36**	.43**	.38**	.43**	.39**	.43**	.43**
Step 2								
Role Switching Difficulty		.27*						
Role Switching Frequency				.18				
Role Switching Physical Effort						.16		
Role Switching Length								.01
Summary Statistics								
R^2 for model	.30	.37	.30	.33	.30	.33	.30	.30
ΔR^2 for last step		.07*		.02		.03		.00

Note. All table values are beta coefficients. $N = 55$ for all models except for Role Switching Frequency model ($N = 68$).
†$p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$.

Table 36

Hierarchical Regression Analysis Predicting Burnout with Unplanned Nonwork-to-Work Role Switching Variables

	(1)		(2)		(3)		(4)	
	Step	*Model*	*Step*	*Model*	*Step*	*Model*	*Step*	*Model*
Step 1								
Neuroticism	.44**	.42**	.44**	.44**	.44**	.43**	.44**	.43**
Daily Hassles	.09	.06	.09	.07	.09	.09	.09	.10
Female	.23†	.22	.23†	.20	.23†	.24†	.23†	.23
Total Weekly Work Hours	.28*	.23†	.28*	.26*	.28*	.29*	.28*	.28*
Step 2								
Role Switching Difficulty		.23†						
Role Switching Frequency				.12				
Role Switching Physical Effort						.04		
Role Switching Length								-.03
Summary Statistics								
R^2 for model	.33	.38	.33	.34	.33	.33	.33	.33
ΔR^2 for last step		.05†		.01		.00		.00

Note. All table values are beta coefficients. $N = 55$ for all models except for Role Switching Frequency model ($N = 68$).
†$p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$.

Table 37

Hierarchical Regression Analysis Predicting Burnout with Work Intrusion Variables

	(1)		(2)		(3)	
	Step	*Model*	*Step*	*Model*	*Step*	*Model*
Step 1						
Neuroticism	.44**	.44**	.44**	.37**	.44**	.43**
Daily Hassles	.09	.09	.09	.15	.09	.13
Female	.23†	.22	.23†	.12	.23†	.21
Total Weekly Work Hours	.28*	.27*	.28*	.19†	.28*	.29*
Step 2						
Work Intrusion Frequency		.04				
Work Intrusion Significance				-.37*		
Work Intrusion Pressure						-.11
Summary Statistics						
R^2 for model	.33	.33	.33	.45	.33	.34
ΔR^2 for last step		.00		.12*		.00

Note. All table values are beta coefficients. $N = 68$. †$p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$.

Table 38

Hierarchical Regression Analysis Predicting Physical Health Symptoms with Unplanned Nonwork-to-Work Role Switching Variables

	(1)		(2)		(3)		(4)	
	Step	*Model*	*Step*	*Model*	*Step*	*Model*	*Step*	*Model*
Step 1								
Neuroticism	.15	.15	.15	.15	.15	.13	.15	.15
Daily Hassles	.26*	.21†	.26*	.21†	.26*	.26†	.26*	.22
Female	.36*	.27*	.36*	.27*	.36*	.36**	.36*	.38**
Total Weekly Work Hours	.29*	.22†	.29*	.22†	.29*	.31*	.29*	.29*
Step 2								
Role Switching Difficulty		.05						
Role Switching Frequency				.34**				
Role Switching Physical Effort						.07		
Role Switching Length								.15
Summary Statistics								
R^2 for model	.34	.35	.34	.44	.34	.35	.34	.36
ΔR^2 for last step		.01		.10**		.00		.02

Note. All table values are beta coefficients. $N = 55$ for all models except for Role Switching Frequency model ($N = 68$). †$p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$.

Table 39

Hierarchical Regression Analysis Predicting Physical Health Symptoms with Work Intrusion Variables

	(1)		(2)		(3)	
	Step	*Model*	*Step*	*Model*	*Step*	*Model*
Step 1						
Neuroticism	.15	.15	.15	.15	.15	.13
Daily Hassles	.26*	.23†	.26*	.15	.26*	.28*
Female	.36*	.29*	.36*	.32*	.36*	.32*
Total Weekly Work Hours	.29*	.22†	.29*	.23	.29*	.26*
Step 2						
Work Intrusion Frequency		.29*				
Work Intrusion Significance				-.13		
Work Intrusion Pressure						-.12
Summary Statistics						
R^2 for model	.34	.42	.34	.25	.34	.36
ΔR^2 for last step		.07*		.02		.00

Note. All table values are beta coefficients. $N = 68$. †$p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$.

Table 40

Summary of Multiple Regression Results for Unplanned Nonwork-to-Work Role Switching Response, Mental Difficulty, Physical Effort, and Negative Affect

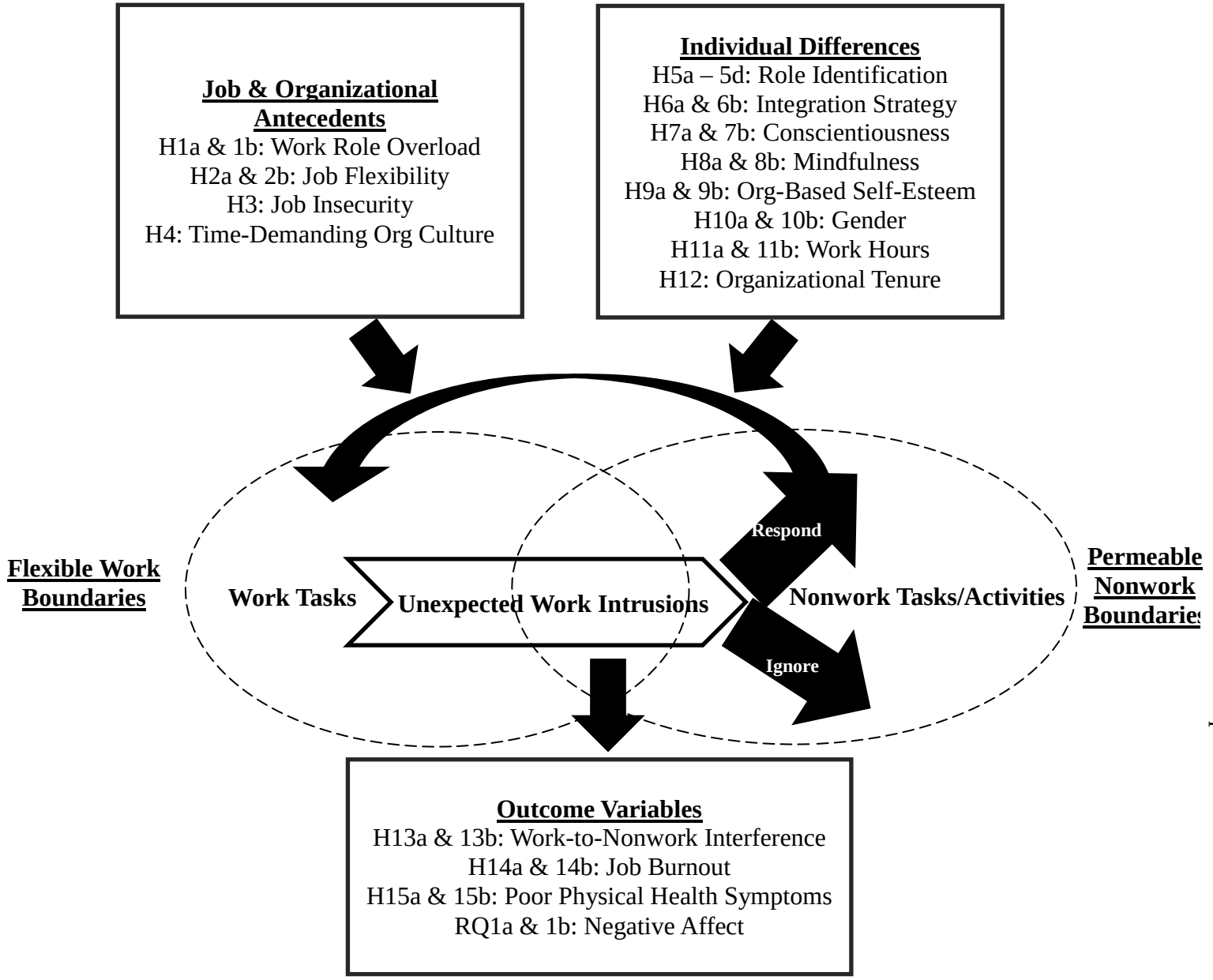
Outcome		Antecedent				Correlation		Multiple Regression		
Variable	Level	Type	Level	Test	Variable	Result	Direction	Result	Direction	Results Summary
WHI	Person	Response	Person	H13a	Response Frequency	ns		ns		
			Episode	H13b	Response Difficulty	sig.	positive	sig.	positive	Consistent
				Exploratory	Response Physical Effort	ns				
		Intrusion	Person	Exploratory	Intrusion Frequency	sig.	positive			
			Episode	Exploratory	Intrusion Significance	ns				
					Intrusion Pressure	ns				
Burnout	Person	Response	Person	H14a	Response Frequency	ns		ns		
			Episode	H14b	Response Difficulty	sig.	positive	marginal	positive	Consistent
				Exploratory	Response Physical Effort	ns				
		Intrusion	Person	Exploratory	Intrusion Frequency	ns				
			Episode	Exploratory	Intrusion Significance	ns		sig.	negative	
					Intrusion Pressure	ns				
Physical health	Person	Response	Person	H15a	Response Frequency	sig.	positive	sig.	positive	Consistent
			Episode	H15b	Response Difficulty			ns		
				Exploratory	Response Physical Effort					

Outcome		Antecedent				Correlation		Multiple Regression		
Variable	Level	Type	Level	Test	Variable	Result	Direction	Result	Direction	Results Summary
		Intrusion	Person	Exploratory	Intrusion Frequency	sig.	positive	sig.	positive	Consistent
			Episode	Exploratory	Intrusion Significance					
					Intrusion Pressure					

Note. For all exploratory analyses, if the correlation results were not significant, then the relationship was not tested with multiple regression unless there was theoretical justification.

Figure Caption

Figure 1. Nomological network of variables surrounding unplanned nonwork-to-work role switching.


Job & Organizational Antecedents
H1a & 1b: Work Role Overload
H2a & 2b: Job Flexibility
H3: Job Insecurity
H4: Time-Demanding Org Culture
Individual Differences
H5a – 5d: Role Identification
H6a & 6b: Integration Strategy
H7a & 7b: Conscientiousness
H8a & 8b: Mindfulness
H9a & 9b: Org-Based Self-Esteem
H10a & 10b: Gender
H11a & 11b: Work Hours
H12: Organizational Tenure
Flexible Work Boundaries
Work Tasks
Unexpected Work Intrusions
Respond
Ignore
Nonwork Tasks/Activities
Permeable Nonwork Boundaries
Outcome Variables
H13a & 13b: Work-to-Nonwork Interference
H14a & 14b: Job Burnout
H15a & 15b: Poor Physical Health Symptoms
RQ1a & 1b: Negative Affect

Appendix A: Study 1 Recruiting Materials

Study 1 E-mail Invitation

Hello [Participant Name],

I am writing to ask if you would like to participate in my dissertation study. The purpose of my study is to learn more about how employees' work lives interact with their personal lives. I am inviting employees to participate in interviews, which will help me learn more about these interactions. The interview is expected to take about 30 to 45 minutes.

If you meet the following criteria, I invite you to participate in this study:

- Employed **full-time** (i.e., work at least 30 hours per week)
- Hold only **one** paid job
- Are **not** a small-business owner, self-employed, or a temporary/contract employee
- Have the flexibility to perform your job **beyond** your traditional workplace (e.g., your office or work building) during **nonwork** hours (e.g., at home after work hours)
- But do **not** work regularly scheduled work hours at home (e.g., in a home office) more than one day per week (i.e., no more than 8 hours a week)
- And at least **one** or more of the following: 1) regularly work with internal/external clients, customers or vendors, 2) regularly report to a manager/supervisor, or 3) work in a team/workgroup (a team/work group is two or more employees who work within a company and socially interact to perform related interdependent tasks with common goals).

Unfortunately, if **do not meet <u>all</u> of the above criteria** then you are ***not*** **eligible to participate** in the study, but I thank you for taking the time to read this e-mail invitation. If you **do meet <u>all</u> of the above criteria**, then you ***are*** **eligible to participate** in the study and I would very much appreciate your participation.

If you meet the selection criteria and are interested in participating, please review the attached study consent form, type your name (which will serve as your signature), and e-mail the form back to me (angela.grotto@baruch.cuny.edu). After I receive your signed consent form, I will contact you to schedule the interview at a mutually convenient time.

If you have any questions or concerns about this study, please reply to this e-mail and I will address your questions as soon as possible. If you are not interested in participating, there is no need to respond.

Sincerely,

Angela R. Grotto, M.Phil.
Industrial/Organizational Psychology Doctoral Candidate
Graduate Center, City University of New York and Baruch College
Ph.D. Program in Psychology at the Graduate Center
365 Fifth Avenue, Room 6304.01
New York, NY 10016-4309
Angela.grotto@baruch.cuny.edu

Study 1 Consent Form

Thank you very much for agreeing to participate in this study. Your interview will provide the researcher with important information about how employees' work lives interact with their personal lives.

Statement of Study Purpose and Procedure

Angela R. Grotto, a doctoral student in the Industrial/Organizational Psychology Ph.D. Program at Baruch College and The Graduate Center of the City University of New York, is the Principal Investigator of this project, entitled "The Interactions of Work and Personal Life." The purpose of this study is to understand how employees' work lives interact with their personal lives.

You will participate in an interview that involves responding to questions about your experiences with how your work role interacts with your personal life. You will not be asked to provide the name of the company for which you work. You will also not be asked to provide the names of any employees with whom you work. You will be asked to provide some background information about yourself. The interview should take about 30 to 45 minutes to complete. The interviewer may follow-up with you at a later date via e-mail to confirm that your experiences were understood.

With your permission, the interview will be audio-taped by the interviewer, Angela R. Grotto, so that the details can be accurately recorded. The tapes will only be heard by Angela R. Grotto and her advisor, Dr. Karen S. Lyness. All gathered information, including written notes from the interview and the audio-tapes, will be kept strictly confidential. The notes and audio tapes will be stored in a locked file cabinet, to which only Angela R. Grotto and her advisor will have access. A transcript of the

interview will be stored in a password-encrypted file to which only Angela R. Grotto and her advisor will have access. Anonymity is guaranteed in reporting the data. Your interview data will not be linked in any way with your personal information. Personal identifying information such as names or company information (if voluntarily provided) will be removed from the transcripts, and a research identification number will be assigned to any written notes, your audio-tape, and the transcript file. The signed consent form will be kept separate from the interview transcript and audio-tape, and stored in a locked file cabinet. After two years, the interview notes, transcript, and audio-tape will be destroyed. The results of this study may be published, but names of people, company names, and any identifying characteristics will not be used in any of the publications. The study findings will be presented or published only at the group level in a summary format.

The potential risks from participating in this study include any discomfort or emotions you may feel in reaction to discussing your experiences of how work interacts with your personal life. There are two benefits of participation. First, the information you share will be used to help with the development of a questionnaire that assesses an important behavior. Second, by sharing your experiences will may learn more about how your own work life interacts with your personal life. Your participation is voluntary and you may discontinue participation at any time.

Thank you for your participation in the study! I will provide you with a copy of this signed form. If you would like a summary of the results, please indicate below and I will send a copy upon completion of the study. If you would like to know more about this study or have any questions, please contact Angela R. Grotto

(angela.grotto@baruch.cuny.edu) in the Psychology Department at Baruch College, Box B 8-215, One Bernard Baruch Way, New York, NY 10010, 347-526-7871. The supervising faculty member on this project is Dr. Karen S. Lyness (646-312-3842; Karen.Lyness@baruch.cuny.edu) in the Department of Psychology at Baruch College. If you have any questions regarding your rights as a research participant, please contact the Baruch College's IRB Administrator: Keisha Peterson, (646) 312-3785, Keisha.Peterson@baruch.cuny.edu; 55 Lexington Ave, Box B 8-215 New York, NY 10010.

If you agree that you are 18 years of age or older, and consent to participate in the interview, please type your name below (which will serve as your signature):

_____ _____

_____ _____

Participant's signature (print name) Date Investigator's signature (print name) Date

If you give permission for your interview to be audio-taped, please type your name below (which will serve as your signature):

_____ _____ _____ _____

Participant's signature (print name) Date Investigator's signature (print name) Date

Please check here if you would like to receive a summary of the study results: □

PLEASE EMAIL THIS COMPLETED FORM BACK TO: angela.grotto@baruch.cuny.edu

Appendix B: Study 1 Interview Protocol

General introduction

As you may remember from reading the consent form, the purpose of this study is to understand how employees' work lives interact with their personal lives. The experiences I'll be asking you to share will help me better understand how work may intrude on your personal life, how you respond to these intrusions, and how these experiences affect you. Any information you share will greatly assist me in my study, so I really appreciate your help.

First let me give you an overview of the interview process. I'm going to ask you to describe an expected, planned, or anticipated work task/activity that you perform during your personal time. Then I'm also going to ask you to describe a recent time (in the past month) when you experienced an unexpected or unanticipated work intrusion during your personal time. I will end the interview with a few background questions. The interview should take about 30 to 45 minutes. Do you have any questions about the process? Keep in mind that you do not have to answer every question and you can end the interview at any time.

Before we begin I just want to make sure you understand the types of experiences I'll be asking you about. Basically, a planned, expected, or anticipated work task/activity during your personal time is any type of work task/activity that is part of your daily routine during your personal time, such as checking e-mail before going to bed or writing a task list for the next day. These types of work tasks/activities can also be scheduled late-night meetings or work that you brought home with you. These work tasks/activities

can be behavioral like the examples I just mentioned, or psychological such as remembering you have a deadline to work on brainstorming an idea.

Then I'll also ask you to describe an unexpected work intrusion that happened while you were involved in some sort of personal activity in a nonwork location, such as your home, during your personal (i.e., nonwork) time. So you'll need to think of any kind of work interruption that you did not plan for, did not anticipate, or you did not expect to happen during your personal time while in a nonwork location. This does not include anything that you planned for ahead of time, such as the planned or routine work activities I mentioned earlier. Examples of an unexpected work intrusion are an unexpected telephone call, voicemail, or e-mail. But these work interruptions do not necessarily stem from someone else or through technology. Interruptions can also be psychological and stem from your own thoughts, such as remembering that you have to work on something that is due the next day. Does this make sense to you? If not, please feel free to ask questions. Can you think of some examples of when work unexpectedly intruded on your personal time while at home or some other nonwork location? [If not, provide examples: receiving a phone call from your manager during the evening while out a dinner with family, receiving a work-related e-mail while getting ready for work in the morning, being distracted by a work-related problem while involved in a personal activity]. Okay, we're ready to begin. Do you have any other questions before we start?

[Read only if participant needs further explanation of terms]. When I say "nonwork locations" I mean any place or location that is not your primary work location (i.e., your office), such as your home, a hotel, outdoor spaces (a park or the beach), your car or a train, restaurants or stores, or someone else's home. Is this clear to you? Can you

give some examples of nonwork locations where you've been interrupted by work? "Nonwork hours" are any hours of the day that are outside of your normal work schedule, such as before 9:00am or after 5:00pm, if those are your work hours. What are your normal work hours? So just keep in mind that if the intrusion happened within those work hours, then it's not relevant for our discussion. Another thing to keep in mind is that I want you to describe work intrusions that occurred while you were involved in some kind of personal activity, such as cleaning, running errands, preparing meals, eating, taking care of a dependent, reading, watching TV, driving, exercising, leisure computer use, spending time with family or friends, attending church, or doing any kind of hobby. What would you say are the most common personal activities you are involved in during a typical week? Those are the activities you should think about when I ask work interruptions.]

Interview questions and probing questions

Planned nonwork-to-work role switching. Please tell me about a planned, expected or anticipated work task/activity that you performed during your personal time while in a nonwork location such as home. Please be as detailed as possible about the experience.

1) What type of work task/activity is it (e.g., brainstorming, planning, checking e-mail, checking voicemail, a scheduled late-night meeting)?
2) Who do you typically communicate with when performing this planned work task, if anyone (e.g., co-worker, manager, subordinate, client, customer, etc.)?
3) How often do you perform this planned work task/activity during your personal time?

4) What typically leads up to the work task/activity (e.g., Which day of the week do you perform the task? What time do you perform the task? What are you typically doing at the time you switch to your work tasks? Who is usually with you at the time?).
5) Why do you perform this planned work task/activity outside of your workplace during your personal time?
6) How long does it typically take to participate in this planned work task/activity?
7) How did you feel about the work task/activity?
    a. How intrusive or disruptive is the work task/activity to your personal time? If it is disruptive, why?
    b. How do the people you are with react (if with anyone at the time)?
    c. How difficult is it to perform the work task/activity?
8) What impact does this work experience have on you during your personal time?
    a. What impact did your behavior have on your nonwork task/activity?
    b. What impact did your behavior have on others who were with you at the time?
    c. Did you think about it afterward? How did you feel afterward?

Follow-up questions for planned role switching. Please tell to me how disruptive this planned work task/activity is to your personal time, on a scale of one to seven, with one being "not at all disruptive" and seven being "extremely disruptive" (1 = *not all disruptive*, 2 = *hardly disruptive*, 3 = *a little disruptive*, 4 = *somewhat disruptive*, 5 = *fairly disruptive*, 6 = *very disruptive*, 7 = *extremely disruptive*).

And how difficult is it for you to perform this planned work task/activity on a scale of one to seven, with one being "not at all difficult" and seven being "very difficult" (1 = *not at all difficult*, 2 =*hardly difficult*, 3 = *a little difficult*, 4 = *somewhat difficult*, 5 = *fairly difficult*, 6 = *very difficult*, 7 = *extremely difficult*).

Unexpected work intrusions. Now please tell me about a specific time within the past month or so when work unexpectedly intruded upon or interrupted your personal time while in a nonwork location, such as your home. Please be as detailed as possible when you describe the work intrusion or interruption. [Probe: The intrusion can be through technology or stemming from yourself.]

What led up to the intrusion (e.g., what day/time was it, did anything significant happen at work that day if it was a work day, what were you doing at the time of the intrusion, were you with anyone at the time, if so who were you with at the time, did anything significant happen during your nonwork hours that day?).

9) What happened?
    a. Who was the source of the intrusion (e.g., you, co-worker, manager, subordinate, client, customer, etc.)?
    b. If the intrusion came from someone besides you, what form of communication was used (e.g., e-mail, phone call)?
    c. What was the content of the intrusion (e.g., was it a question, an update, a request for information, a complaint, etc.)?
    d. How anticipated or expected was the intrusion?
    e. How intrusive was the work interruption?
    f. How urgent did you perceive the work matter to be?

10) How did you feel about the work intrusion?
    a. What were you thinking and feeling at that moment you experienced the intrusion?
    b. How disruptive to your personal time did you perceive the intrusion to be? Why?
    c. How did the people you were with react (if with anyone at the time)?
11) How did you respond to the intrusion? [Probe: Responses can be behavioral or psychological, such as brainstorming or mentally planning for a meeting. If the participants says that s/he did not respond, question whether there was a psychological role transition (e.g., Did you think any further about the work issue?).]
    a. Why did you respond that way?
    b. If you decided to ignore the intrusion:
        i. Why did you ignore it?
        ii. How difficult was it to ignore it?
        iii. Did you feel pressure to ignore the intrusion? If so, what or who made you feel pressured?
        iv. Was your decision to ignore the intrusion supported by those with you at the time? How did they feel about the intrusion?
    c. If you decided to respond to the intrusion by switching to the work role:
        i. Why did you respond that way?
            1. Did you feel pressure to do so? If so, what or who made you feel pressured?

2. Was your decision to switch roles supported by those with you at the time? How did they feel about it?

ii. How difficult was it to respond (how much effort did it require, how long did it take to address the work matter, did you have to stop what you were doing to attend to the work task, etc.)?

iii. How disruptive was it to your personal time?

12) What impact did your decision to [ignore/respond] to the work intrusion have on you?

a. What impact did your response have on your nonwork task/activity?

b. What impact did your response have on others who were with you at the time?

c. Did you think about the work intrusion afterward? If so, for how long? What did you think about?

d. How did you feel afterward?

Follow-up questions to unexpected work intrusion. Based on the experience you just described, please tell me how unexpected the work intrusion was for you on a scale of one to seven, with one being "not at all unexpected" and seven being "extremely unexpected" (1 = *not all unexpected*, 2 = *hardly unexpected*, 3 = *a little unexpected*, 4 = *somewhat unexpected*, 5 = *fairly unexpected*, 6 = *very unexpected*, 7 = *extremely unexpected*).

How intrusive was the work intrusion on a scale of one to seven, with one being "not at all intrusive" and seven being "extremely intrusive" (1 = *not all intrusive*, 2 = *very*

little intrusive, 3 = *a little intrusive*, 4 = *somewhat intrusive*, 5 = *fairly intrusive*, 6 = *very intrusive*, 7 = *extremely intrusive*).

How urgent did the work intrusion seem to be, on a scale of one to seven, with one being "not at all urgent" and seven being "extremely urgent" (1 = *not all urgent*, 2 = *hardly urgent*, 3 = *a little urgent*, 4 = *somewhat urgent*, 5 = *fairly urgent*, 6 = *very urgent*, 7 = *extremely urgent*).

How disruptive was the work intrusion to your personal time, on a scale of one to seven, with one being "not at all disruptive" and seven being "extremely disruptive" (1 = *not all disruptive*, 2 = *hardly disruptive*, 3 = *a little disruptive*, 4 = *somewhat disruptive*, 5 = *fairly disruptive*, 6 = *very disruptive*, 7 = *extremely disruptive*).

Ask this question if the participant ignored the work intrusion: How difficult it was for you to ignore the intrusion on a scale of one to seven, with one being "not at all difficult" and seven being "very difficult" (1 = *not at all difficult*, 2 =*hardly difficult*, 3 = *a little difficult*, 4 = *somewhat difficult*, 5 = *fairly difficult*, 6 = *very difficult*, 7 = *extremely difficult*).

Ask these two questions only if the participant responded to the work intrusion: How disruptive to your personal time was it to switch roles, on a scale of one to seven, with one being "not at all disruptive" and seven being "extremely disruptive" (1 = *not all disruptive*, 2 = *hardly disruptive*, 3 = *a little disruptive*, 4 = *somewhat disruptive*, 5 = *fairly disruptive*, 6 = *very disruptive*, 7 = *extremely disruptive*). And now please tell me how difficult it was for you to switch from your nonwork task or activity to the work task on a scale of one to seven, with one being "not at all difficult" and seven being "very

difficult" (1 = *not at all difficult*, 2 =*hardly difficult*, 3 = *a little difficult*, 4 = *somewhat difficult*, 5 = *fairly difficult*, 6 = *very difficult*, 7 = *extremely difficult*).

Demographic questions: Thanks so much for sharing those experiences! Now I'm just going to ask a few background questions.

1) How old are you?
2) What is your marital status: 1 = S*ingle/not married*, 2 = *Separated*, 3 = *Divorced*, 4 = *Widowed*, 5 = *Married/living as married*?
3) [If married or partnered]. What is your partner/spouse's work status: 1 = *homemaker/unemployed*, 2 = *part-time, i.e., less than 30 hours per week*, 3 = *full-time, i.e., at least 30 hours per week*?
4) [If spouse/partner works at least part-time, ask the following: And how many hours per week does your spouse/partner generally work?]
5) Do you have any children: 1 = *yes*, 2 = *no*?
6) [If yes]. How many? And the age(s)?
7) What is your highest level of education (e.g., what type of degree do you have)?
8) What is your company tenure – how many years have you been with your company?
9) What is your job level: 1 = *non-manager clerical, administrative or sales staff,* 2 = *non-manager professional staff (e.g., attorney, engineer, etc.)*, 3 = *first level supervisor/manager*, 4 = *mid-level manager*, 5 = *upper-level manager (e.g., department head)*, 7 = *senior manager (e.g., VP or director)*, 8 = *CEO, COO, president, or EVP*?

Final questions

Thank you so much for your time! I really appreciate that you shared your personal experiences with me. Have we covered everything? Is there anything else you would like to share or discuss? Would you mind if I follow up with you via e-mail to confirm that my summary of your experiences is accurate?

Thanks again for your time. If you have any questions or concerns, please do not hesitate to e-mail me or call me.

Appendix C: Study 2 Consent Form for Interviewees

Thank you very much for agreeing to participate in this study. Your feedback will greatly help in the development of a questionnaire that will assess how work intrudes on employees' personal lives.

Angela R. Grotto, a doctoral student in the Industrial/Organizational Psychology Ph.D. Program at Baruch College and The Graduate Center of the City University of New York, is the Principal Investigator of this project, entitled "The Interactions of Work and Personal Life." The purpose of this study is to gather feedback on a newly developed questionnaire that assesses work intrusions.

You will be asked to review a questionnaire and provide feedback on whether the questionnaire items are clear and easy for employees like yourself to understand. You will also be asked whether the questionnaire items are relevant to employees like yourself. You will also be asked to provide feedback on how well the questions can assess how employees respond to work intrusions. Based on your feedback, the questionnaire may be modified. The feedback process should take about 45 minutes to complete. All feedback will be kept strictly confidential and will be stored in a password-encrypted file to which only the researcher and her advisor, Dr. Karen S. Lyness, will have access. Anonymity is guaranteed. Your feedback will not be directly linked with your personal information. A research identification number will be assigned to your feedback questionnaire. A separate file that links your name and research number will be stored on the researcher's computer with password protection. The purpose of indirectly linking your name with your feedback is so the researcher may contact you with any questions about your feedback. Any identifying information, such as this signed consent

form, will be kept separate from your feedback and stored in a separate password-encrypted file. All data files will be deleted after three years. The study findings may be presented or published at the group level in a summary format.

The potential risks from participating in this study are no more than encountered in everyday life. A potential direct benefit of participating in the study is learning about an important work-nonwork experience that is relevant to many employees. The potential indirect benefit of participation is contributing to the development of a new questionnaire. Your participation is voluntary and you may discontinue participation at any time.

Thank you for your participation in the study! I will provide you with a copy of this signed form.

If you would like to know more about this study or have any questions, please contact Angela R. Grotto (angela.grotto@baruch.cuny.edu) in the Psychology Department at Baruch College, Box B 8-215, One Bernard Baruch Way, New York, NY 10010, 347-526-7871. The supervising faculty member on this project is Dr. Karen S. Lyness (646-312-3842; Karen.Lyness@baruch.cuny.edu) in the Department of Psychology at Baruch College.

If you have any questions regarding your rights as a research participant, please contact the Baruch College's IRB Administrator: Keisha Peterson, (646) 312-3785, Keisha.Peterson@baruch.cuny.edu; 55 Lexington Ave, Box B 8-215 New York, NY 10010.

If you agree that you are 18 years of age or older, and consent to participate in the interview, please sign below:

I have read the above information and I consent to participate in this study.

_____ _____ _____ _____

Participant's signature (print name) Date Investigator's signature (print name) Date

I would like to receive a summary of the results: □

Appendix D: Study 2 Invitation for Subject Matter Experts

Hello [Participant Name],

I am writing to ask you to participate in my dissertation study. The purpose of this study is to gather feedback on a newly developed questionnaire to assess how work intrudes on employees' personal lives. Your expertise in this subject area and your feedback will help me determine whether my questionnaire adequately covers the types of experiences in which I am interested. Your feedback will also help me ensure that my questionnaire instructions and items are clear and easy to understand. I really appreciate your participation since it will help me improve my questionnaire and complete an important phase of my dissertation study.

If you are interested in participating, please review the attached study consent form, print your name (which will serve as your signature), and e-mail the form back to me (angela.grotto@baruch.cuny.edu). Once I receive your signed consent form I will send you an e-mail with a link to the questionnaire. If you have any questions, please reply to this e-mail and I will respond to your questions as soon as possible.

Thank you,

Angela R. Grotto, M.Phil.
Industrial/Organizational Psychology Doctoral Candidate
Graduate Center, City University of New York and Baruch College
Ph.D. Program in Psychology at the Graduate Center
365 Fifth Avenue, Room 6304.01
New York, NY 10016-4309
Angela.grotto@baruch.cuny.edu

Appendix E: Study 2 Consent Form for Subject Matter Experts

Thank you very much for agreeing to participate in this study. Your feedback will greatly help in the development of a questionnaire that will assess how work intrudes on employees' personal lives.

Angela R. Grotto, a doctoral student in the Industrial/Organizational Psychology Ph.D. Program at Baruch College and The Graduate Center of the City University of New York, is the Principal Investigator of this project, entitled "The Interactions of Work and Personal Life." The purpose of this study is to gather feedback on a newly developed questionnaire that assesses work intrusions.

You will be asked to review a questionnaire and provide feedback on the clarity of the questionnaire items, how well employees will be able to understand the items, and the applicability of the items to employees. You will be asked to provide feedback on how well the questionnaire items assess how employees respond to work intrusions. Based on your feedback, the questionnaire may be modified. The feedback process should take about 45 minutes to complete. All feedback will be kept strictly confidential and will be stored in a password-encrypted file to which only the researcher and her advisor, Dr. Karen S. Lyness, will have access. Anonymity is guaranteed. Your feedback will not be directly linked with your personal information. A research identification number will be assigned to your feedback questionnaire. A separate file that links your name and research number will be stored on the researcher's computer with password protection. The purpose of indirectly linking your name with your feedback is so the researcher may contact you with any questions about your feedback. Any identifying information, such as this signed consent form, will be kept separate from your feedback

and stored in a separate password-encrypted file. All data files will be deleted after three years. The study findings may be presented or published at the group level in a summary format.

The potential risks from participating in this study are no more than encountered in everyday life. A potential direct benefit of participating in the study is learning about an important work-nonwork experience that is relevant to many employees. The potential indirect benefit of participation is contributing to the development of a new questionnaire. Your participation is voluntary and you may discontinue participation at any time.

Thank you for your participation in the study! I will provide you with a copy of this signed form.

If you would like to know more about this study or have any questions, please contact Angela R. Grotto (angela.grotto@baruch.cuny.edu) in the Psychology Department at Baruch College, Box B 8-215, One Bernard Baruch Way, New York, NY 10010, 347-526-7871. The supervising faculty member on this project is Dr. Karen S. Lyness (646-312-3842; Karen.Lyness@baruch.cuny.edu) in the Department of Psychology at Baruch College.

If you have any questions regarding your rights as a research participant, please contact the Baruch College's IRB Administrator: Keisha Peterson, (646) 312-3785, Keisha.Peterson@baruch.cuny.edu; 55 Lexington Ave, Box B 8-215 New York, NY 10010.

If you agree that you are 18 years of age or older, and consent to participate in the interview, please sign below:

I have read the above information and I consent to participate in this study.

_____	_____	_____	_____
Participant's signature (print name)	Date	Investigator's signature (print name)	Date

I would like to receive a summary of the results: □

Appendix F: Interviewee and Subject Matter Experts Feedback Questionnaires

CLARITY OF ITEMS AND INTRUCTIONS TEXT: Indicate the extent to which the instructions, lead-in text, or measurement items and corresponding response scales are clear, i.e., easy to read and understand. Think about whether there are any unclear meanings, jargon, awkward wording, or double-barreled wording (e.g., two questions in one).

Use this 7-point scale: 1 = very unclear, 2 = unclear, 3 = somewhat unclear, 4 = neither clear nor unclear, 5 = somewhat clear, 6 = clear, 7 = very clear

Comments: For ratings of 3 or below, comment on your rating in the comment box.

Item Text	Response Scale	Your Rating	Comments
How many unexpected work intrusions during your nonwork hours did you experience today while in any nonwork location (e.g., home, car, store, other's home, gym, outdoors, etc.).			
Note, remember to think about work intrusions that were unexpected or unplanned, not work tasks or activities that were planned or scheduled ahead of time during nonwork hours, such as bringing work home with you. Only include intrusions/interruptions that occurred during your personal (i.e., nonwork) time. Unexpected work intrusions can be externally initiated (e.g., a phone call or email) or internally initiated (e.g., a work-related thought or concern). Focus only on the externally initiated work intrusions.			
If you did not experience any unplanned work intrusions today, then you do not need to complete the questionnaire today. If you experienced at least one unexpected work intrusion during your nonwork hours today, complete the following set of questions for each work intrusion:			
Thinking about the first work intrusion for today,			

answer the following questions:			
When did the unexpected work intrusion occur?	1 = Early morning, 2 = Morning, 3 = Afternoon, 4 = Evening, 5 = Late evening, 6 = During the middle of the night		
Who was with you at the time?	1 = No one (you were alone, 2 = My significant other (e.g., spouse, partner, boyfriend, girlfriend), 3 = My child(ren), 4 = Other family member(s) (e.g., parents, siblings), 5 = Friends		
Where were you?	1 = Home, 2 = Other's home, 3 = Car or other form of transportation, 4 = Store or restaurant, 5 = Outdoors, 6 = Other nonwork location_____		
What were you doing at the time?	1 = Leisure activity (e.g., relaxing, reading, eating, watching TV, using computer for personal reasons), 2 = Attending a social or family event, 3 = Nonwork task or domestic responsibility (e.g., cleaning, cooking, errands, home maintenance), 4 = Child care, 5 = Elder care, 6 = Cannot remember		
Who caused the work intrusion?	1 = Co-worker/colleague, 2 = Subordinate, 3 = Boss/manager/supervisor, 4 = Client/customer		
What was the nature of the intrusion?	1 = Question/request for information, 2 = Request for help, 3 = Demand, 4 = customer/client complaint, 5 = Information/update, 6 = Emergency, 7		

	= Work error, 8 = Other _____		
Based on your experience in your current job, indicate the extent to which this type of work intrusion is:			
Unusual	1 = Not at all, 4 = Somewhat, 7 = Very much		
Expected	1 = Not at all, 4 = Somewhat, 7 = Very much		
Common	1 = Not at all, 4 = Somewhat, 7 = Very much		
Surprising	1 = Not at all, 4 = Somewhat, 7 = Very much		
Foreseeable	1 = Not at all, 4 = Somewhat, 7 = Very much		
Indicate the extent to which you perceived this particular work intrusion to be:			
Necessary	1 = Not at all, 4 = Somewhat, 7 = Very much		
Important	1 = Not at all, 4 = Somewhat, 7 = Very much		
Urgent	1 = Not at all, 4 = Somewhat, 7 = Very much		
Something only you could address	1 = Not at all, 4 = Somewhat, 7 = Very much		
Did you ignore (i.e., choose not to respond to) the work intrusion?	1 = No, 2 = Yes		
If you ignored the intrusion, how difficult was it to do so?	1 = Not at all difficult, 4 = Somewhat difficult, 7 = Extremely difficult		
Whether or not you responded, indicate the extent to which you felt that your response was:			
Needed by others (e.g., co-workers, client, or customer)	1 = Not at all, 4 = Somewhat, 7 = Very much		

Part of your job responsibilities	1 = Not at all, 4 = Somewhat, 7 = Very much		
Expected by the person causing the intrusion	1 = Not at all, 4 = Somewhat, 7 = Very much		
Demanded by the person causing the intrusion	1 = Not at all, 4 = Somewhat, 7 = Very much		
Expected by someone else other than the person causing the intrusion	1 = Not at all, 4 = Somewhat, 7 = Very much		
Demanded by someone else other than the person causing the intrusion	1 = Not at all, 4 = Somewhat, 7 = Very much		
Whether or not you responded, indicate the extent to which you felt pressure to respond from:			
Yourself	1 = Not at all, 4 = Somewhat, 7 = Very much		
The person causing the intrusion	1 = Not at all, 4 = Somewhat, 7 = Very much		
Someone internal to your company, besides the person causing the intrusion	1 = Not at all, 4 = Somewhat, 7 = Very much		
Someone external to your company (i.e., a client/customer)	1 = Not at all, 4 = Somewhat, 7 = Very much		
IMPORTANT: If you ignored or chose to not respond to the work intrusion, you do not need to complete the remaining questions for this work intrusion experience.			
If did not ignore the intrusion, how did you respond?			
Replied to an email on your Smartphone	1 = No, 2 = Yes		
Logged onto your computer to respond to an email	1 = No, 2 = Yes		
Answered a phone call	1 = No, 2 = Yes		
Listened to a voicemail	1 = No, 2 = Yes		
Made a phone call	1 = No, 2 = Yes		
Other_____ _____			
Indicate the extent to which your response to the			

intrusion was:			
Immediate	1 = Not at all, 4 = Somewhat, 7 = Very much		
Automatic	1 = Not at all, 4 = Somewhat, 7 = Very much		
Planned	1 = Not at all, 4 = Somewhat, 7 = Very much		
To what extent was your response to the intrusion:			
Bothersome	1 = Not at all, 4 = Somewhat, 7 = Very much		
Inconvenient (or came at a bad time)	1 = Not at all, 4 = Somewhat, 7 = Very much		
Disruptive	1 = Not at all, 4 = Somewhat, 7 = Very much		
Mentally distracting	1 = Not at all, 4 = Somewhat, 7 = Very much		
To what extent was your response to the intrusion:			
Easy	1 = Not at all, 4 = Somewhat, 7 = Very much		
Requiring mental effort	1 = Not at all, 4 = Somewhat, 7 = Very much		
Requiring physical effort	1 = Not at all, 4 = Somewhat, 7 = Very much		
Manageable	1 = Not at all, 4 = Somewhat, 7 = Very much		
Mentally draining	1 = Not at all, 4 = Somewhat, 7 = Very much		
Physically draining	1 = Not at all, 4 = Somewhat, 7 = Very much		
Challenging	1 = Not at all, 4 = Somewhat, 7 = Very much		

How much time did you spend responding to the intrusion? (use minutes and hours, e.g., 15 minutes or 1 hour and 10 minutes) ***Do not include any further follow-up work that was done later on.***			
***After* responding to the intrusion, how much time did you spend:**			
Emailing colleagues, team members, or subordinates	1 = None at all, 4 = Some time, 7 = A lot of time		
Emailing your boss/manager/supervisor	1 = None at all, 4 = Some time, 7 = A lot of time		
Emailing clients/customers	1 = None at all, 4 = Some time, 7 = A lot of time		
Calling colleagues, team members, or subordinates	1 = None at all, 4 = Some time, 7 = A lot of time		
Calling your boss/manager/supervisor	1 = None at all, 4 = Some time, 7 = A lot of time		
Calling clients/customers	1 = None at all, 4 = Some time, 7 = A lot of time		
Doing other forms of work (not including emails or phone calls)	1 = None at all, 4 = Some time, 7 = A lot of time		
***After* responding to the intrusion, to what extent did you:**			
Brainstorm work ideas	1 = Not at all, 4 = Somewhat, 7 = A great extent		
Mentally prepare for work	1 = Not at all, 4 = Somewhat, 7 = A great extent		
Worry about work	1 = Not at all, 4 = Somewhat, 7 = A great extent		
Ruminate about work (i.e., negative thoughts about work)	1 = Not at all, 4 = Somewhat, 7 = A great extent		
Think about work (but did not worry or ruminate)	1 = Not at all, 4 = Somewhat, 7 = A great extent		

Indicate the extent to which your response to the intrusion positively impacted any of the following individuals today:			
Yourself	1 = Not at all, 4 = Somewhat, 7 = Very much		
Your significant other/partner/spouse	1 = Not at all, 4 = Somewhat, 7 = Very much		
Your child(ren)	1 = Not at all, 4 = Somewhat, 7 = Very much		
Your other family members	1 = Not at all, 4 = Somewhat, 7 = Very much		
Your friends	1 = Not at all, 4 = Somewhat, 7 = Very much		
Indicate the extent to which your response to the intrusion negatively impacted any of the following individuals today:			
Yourself	1 = Not at all, 4 = Somewhat, 7 = Very much		
Your significant other/partner/spouse	1 = Not at all, 4 = Somewhat, 7 = Very much		
Your child(ren)	1 = Not at all, 4 = Somewhat, 7 = Very much		
Your other family members	1 = Not at all, 4 = Somewhat, 7 = Very much		
Your friends	1 = Not at all, 4 = Somewhat, 7 = Very much		

ITEM COVERAGE: Indicate the extent to which you agree that the questionnaire items and response scales could adequately capture the experience you shared with me in your interview. In other words, indicate the extent to which you agree that each questionnaire item could be answered with the response scale provided, when thinking about the *specific* experience you shared of when work unexpectedly intruded into your personal time.

* Note that some items may not be relevant or applicable to your specific experience, so in these cases think about whether the provided response scale would be sufficient for you to answer the question.

Use this 7-point scale: 1 = strongly disagree, 2 = disagree, 3 = somewhat disagree, 4 = neither agree nor disagree, 5 = somewhat agree, 6 = agree, 7 = strongly agree

Comments: For ratings 3 or below, please comment on your rating in the comment box.

Item Text	Response Scale	Your Rating	Comments
How many unexpected work intrusions during your nonwork hours did you experience today while in any nonwork location (e.g., home, car, store, other's home, gym, outdoors, etc.).			
Note, remember to think about work intrusions that were unexpected or unplanned, not work tasks or activities that were planned or scheduled ahead of time during nonwork hours, such as bringing work home with you. Only include intrusions/interruptions that occurred during your personal (i.e., nonwork) time. Unexpected work intrusions can be externally initiated (e.g., a phone call or email) or internally initiated (e.g., a work-related thought or concern). Focus only on the externally initiated work intrusions.			

If you did not experience any unplanned work intrusions today, then you do not need to complete the questionnaire today. If you experienced at least one unexpected work intrusion during your nonwork hours today, complete the following set of questions for <u>each</u> work intrusion:			
Thinking about the first work intrusion for today, answer the following questions:			
When did the unexpected work intrusion occur?	1 = Early morning, 2 = Morning, 3 = Afternoon, 4 = Evening, 5 = Late evening, 6 = During the middle of the night		
Who was with you at the time?	1 = No one (you were alone, 2 = My significant other (e.g., spouse, partner, boyfriend, girlfriend), 3 = My child(ren), 4 = Other family member(s) (e.g., parents, siblings), 5 = Friends		
Where were you?	1 = Home, 2 = Other's home, 3 = Car or other form of transportation, 4 = Store or restaurant, 5 = Outdoors, 6 = Other nonwork location_____		
What were you doing at the time?	1 = Leisure activity (e.g., relaxing, reading, eating, watching TV, using computer for personal reasons), 2 = Attending a social or family event, 3 = Nonwork task or domestic responsibility (e.g., cleaning, cooking, errands, home maintenance), 4 = Child care, 5 = Elder care, 6 = Cannot remember		
Who caused the work intrusion?	1 = Co-worker/colleague, 2 = Subordinate, 3 =		

	Boss/manager/supervisor, 4 = Client/customer		
What was the nature of the intrusion?	1 = Question/request for information, 2 = Request for help, 3 = Demand, 4 = customer/client complaint, 5 = Information/update, 6 = Emergency, 7 = Work error, 8 = Other _____		
Based on your experience in your current job, indicate the extent to which <u>this type</u> of work intrusion is:			
Unusual	1 = Not at all, 4 = Somewhat, 7 = Very much		
Expected	1 = Not at all, 4 = Somewhat, 7 = Very much		
Common	1 = Not at all, 4 = Somewhat, 7 = Very much		
Surprising	1 = Not at all, 4 = Somewhat, 7 = Very much		
Foreseeable	1 = Not at all, 4 = Somewhat, 7 = Very much		
Indicate the extent to which you perceived this particular work intrusion to be:			
Necessary	1 = Not at all, 4 = Somewhat, 7 = Very much		
Important	1 = Not at all, 4 = Somewhat, 7 = Very much		
Urgent	1 = Not at all, 4 = Somewhat, 7 = Very much		
Something only you could address	1 = Not at all, 4 = Somewhat, 7 = Very much		
Did you ignore (i.e., choose not to respond to) the work intrusion?	1 = No, 2 = Yes		
If you ignored the intrusion, how difficult was it to do	1 = Not at all difficult, 4 = Somewhat		

so?	difficult, 7 = Extremely difficult		
Whether or not you responded, indicate the extent to which you felt that your response was:			
Needed by others (e.g., co-workers, client, or customer)	1 = Not at all, 4 = Somewhat, 7 = Very much		
Part of your job responsibilities	1 = Not at all, 4 = Somewhat, 7 = Very much		
Expected by the person causing the intrusion	1 = Not at all, 4 = Somewhat, 7 = Very much		
Demanded by the person causing the intrusion	1 = Not at all, 4 = Somewhat, 7 = Very much		
Expected by someone else other than the person causing the intrusion	1 = Not at all, 4 = Somewhat, 7 = Very much		
Demanded by someone else other than the person causing the intrusion	1 = Not at all, 4 = Somewhat, 7 = Very much		
Whether or not you responded, indicate the extent to which you felt pressure to respond from:			
Yourself	1 = Not at all, 4 = Somewhat, 7 = Very much		
The person causing the intrusion	1 = Not at all, 4 = Somewhat, 7 = Very much		
Someone internal to your company, besides the person causing the intrusion	1 = Not at all, 4 = Somewhat, 7 = Very much		
Someone external to your company (i.e., a client/customer)	1 = Not at all, 4 = Somewhat, 7 = Very much		
IMPORTANT: If you ignored or chose to not respond to the work intrusion, you do not need to complete the remaining questions for this work intrusion experience.			
If did not ignore the intrusion, how did you respond?			
Replied to an email on your Smartphone	1 = No, 2 = Yes		
Logged onto your computer to respond to an email	1 = No, 2 = Yes		

Answered a phone call	1 = No, 2 = Yes		
Listened to a voicemail	1 = No, 2 = Yes		
Made a phone call	1 = No, 2 = Yes		
Other_____ _____			
Indicate the extent to which your response to the intrusion was:			
Immediate	1 = Not at all, 4 = Somewhat, 7 = Very much		
Automatic	1 = Not at all, 4 = Somewhat, 7 = Very much		
Planned	1 = Not at all, 4 = Somewhat, 7 = Very much		
To what extent was your response to the intrusion:			
Bothersome	1 = Not at all, 4 = Somewhat, 7 = Very much		
Inconvenient (or came at a bad time)	1 = Not at all, 4 = Somewhat, 7 = Very much		
Disruptive	1 = Not at all, 4 = Somewhat, 7 = Very much		
Mentally distracting	1 = Not at all, 4 = Somewhat, 7 = Very much		
To what extent was your response to the intrusion:			
Easy	1 = Not at all, 4 = Somewhat, 7 = Very much		
Requiring mental effort	1 = Not at all, 4 = Somewhat, 7 = Very much		
Requiring physical effort	1 = Not at all, 4 = Somewhat, 7 = Very much		
Manageable	1 = Not at all, 4 = Somewhat, 7 = Very much		
Mentally draining	1 = Not at all, 4 = Somewhat, 7 = Very		

	much		
Physically draining	1 = Not at all, 4 = Somewhat, 7 = Very much		
Challenging	1 = Not at all, 4 = Somewhat, 7 = Very much		
How much time did you spend responding to the intrusion? (use minutes and hours, e.g., 15 minutes or 1 hour and 10 minutes) ***Do not include any further follow-up work that was done later on.***			
<u>After</u> responding to the intrusion, how much time did you spend:			
Emailing colleagues, team members, or subordinates	1 = None at all, 4 = Some time, 7 = A lot of time		
Emailing your boss/manager/supervisor	1 = None at all, 4 = Some time, 7 = A lot of time		
Emailing clients/customers	1 = None at all, 4 = Some time, 7 = A lot of time		
Calling colleagues, team members, or subordinates	1 = None at all, 4 = Some time, 7 = A lot of time		
Calling your boss/manager/supervisor	1 = None at all, 4 = Some time, 7 = A lot of time		
Calling clients/customers	1 = None at all, 4 = Some time, 7 = A lot of time		
Doing other forms of work (<u>not</u> including emails or phone calls)	1 = None at all, 4 = Some time, 7 = A lot of time		
<u>After</u> responding to the intrusion, to what extent did you:			
Brainstorm work ideas	1 = Not at all, 4 = Somewhat, 7 = A great extent		
Mentally prepare for work	1 = Not at all, 4 = Somewhat, 7 = A great extent		
Worry about work	1 = Not at all, 4 = Somewhat, 7 = A		

	great extent		
Ruminate about work (i.e., negative thoughts about work)	1 = Not at all, 4 = Somewhat, 7 = A great extent		
Think about work (but did not worry or ruminate)	1 = Not at all, 4 = Somewhat, 7 = A great extent		
Indicate the extent to which your response to the intrusion positively impacted any of the following individuals today:			
Yourself	1 = Not at all, 4 = Somewhat, 7 = Very much		
Your significant other/partner/spouse	1 = Not at all, 4 = Somewhat, 7 = Very much		
Your child(ren)	1 = Not at all, 4 = Somewhat, 7 = Very much		
Your other family members	1 = Not at all, 4 = Somewhat, 7 = Very much		
Your friends	1 = Not at all, 4 = Somewhat, 7 = Very much		
Indicate the extent to which your response to the intrusion negatively impacted any of the following individuals today:			
Yourself	1 = Not at all, 4 = Somewhat, 7 = Very much		
Your significant other/partner/spouse	1 = Not at all, 4 = Somewhat, 7 = Very much		
Your child(ren)	1 = Not at all, 4 = Somewhat, 7 = Very much		
Your other family members	1 = Not at all, 4 = Somewhat, 7 = Very much		
Your friends	1 = Not at all, 4 = Somewhat, 7 = Very much		

Please provide any comments you may have about the applicability of the questionnaire for employees like yourself. Think about whether an employee like yourself would be able to complete this questionnaire, given the type of work you do. (Interviewees only)
COMMENTS:
Please provide below any comments you may have about the redundancy of the questionnaire items. (SMEs only)
COMMENTS:
Is there anything that you feel is missing from the questionnaire or anything else on which you want to comment? (SMEs only)
COMMENTS:

Appendix G: Study 3 Pilot Study Materials

Pilot Study Recruitment E-mail

Hello [Participant Name],

This is an invitation to participate in a testing phase for my dissertation study. The purpose my study is to better understand how work intrudes on employees' personal lives. You are being invited to complete online questionnaires in three phases for a four-day time period. First, you will complete a pre-questionnaire on the first day of the study period, then you will complete a daily questionnaire for three days, and then on day four you will complete a final questionnaire. Your participation will require up to two hours of your time.

Your participation will be very important for a new research study that is designed to gain a better understanding of how work intrudes on employees' personal lives. Given the demands of today's jobs and the sophisticated technology that employees regularly use as part of their jobs, work can easily and frequently interrupt personal life. It is important to understand these experiences and how employees are affected by the interruptions.

If you are interested in participating in this research pilot study, click on the link below which will take you to the consent form. If you agree to participate, type your name (which will serve as your signature) in the form and submit the form by clicking the "Submit" button. Once you have submitted your consent form, you will be transferred to a webpage with more detailed information about the study. If you have any questions about this process, you can e-mail me directly (angela.grotto@baruch.cuny.edu). Thank you for your participation!

Thank you,

Angela R. Grotto, M.Phil.
Graduate Center, City University of New York and Baruch College
Ph.D. Program in Psychology at the Graduate Center
365 Fifth Avenue, Room 6304.01
New York, NY 10016-4309
angela.grotto@baruch.cuny.edu

Click the link to access the Consent Form:

>> INSERT LINK HERE FOR FOCAL PARTICIPANT'S CONSENT FORM <<

Pilot Study Participant Consent Form

Thank you very much for agreeing to participate in this study. The information you provide will be critical to the development of a questionnaire that can assess how work intrudes on employees' personal lives.

Angela R. Grotto, a doctoral student in the Industrial/Organizational Psychology Ph.D. Program at Baruch College and The Graduate Center of the City University of New York, is the Principal Investigator of this project, entitled "The Interactions of Work and Personal Life." The purpose of this pilot study is to assess the user-friendliness of online daily questionnaires.

You will participate in a four-day pilot study. Upon signing and submitting this consent form, you will be transferred to a webpage that provides guidelines to help you determine whether it is an appropriate time period to participate in the study. When you are ready to participate, you will click a button to continue on to the first online questionnaire. The first questionnaire is to be completed on day one of the study and will take about 30 minutes to complete. At the end of days one, two, and three you will receive daily e-mails with links to the daily online questionnaire. The daily questionnaire should be completed at the end of each day around the same time (i.e., your bedtime) and will take about 15 minutes to complete. On day four an e-mail will be sent to you with a link to a final online questionnaire, which will take about 30 minutes to complete. You will have five days to complete the final questionnaire and will receive two e-mail reminders. The final questionnaire will include some open-ended questions about your survey experience.

Sirota Survey Intelligence's SSL encryption is being used for all of the online questionnaires, and the data will be stored on their secure server. The survey data will be as secure as online communications can be. Per the requirements of the American Psychological Association, data from this study will be saved on a password-protected computer for 5 years after the project is complete before the data are destroyed. The survey data will be stored in a separate file accessible only to the researcher and her advisor. This consent form will be stored separately from your survey responses. Your survey responses will be assigned a random identification number and no personally identifying information will be stored with your responses. The results of this study may be disseminated through publications or presentations. Anonymity and confidentiality are guaranteed in the reporting of the data. Your name and email address will not be linked to your responses, and research findings will be reported in aggregate format.

The only potential risk from participating in this pilot study is emotional or psychological discomfort you may experience when thinking about how work intrudes on your personal life. There are no known direct benefits of participating in this research. An indirect benefit of participation is gaining insight into how your work life interacts with your personal life.

Your participation is voluntary and you may discontinue participation at any time. Thank you again for your participation in the study! I will provide you with a copy of this signed form.

If you would like to know more about this pilot study or have any questions about this study, please contact Angela R. Grotto, (Angela.Grotto@baruch.cuny.edu) in the Psychology Department at Baruch College, Box B 8-215, One Bernard Baruch Way,

New York, NY 10010, 347-526-7871. The supervising faculty member on this project is Dr. Karen S. Lyness (646-312-3842; Karen.Lyness@baruch.cuny.edu) in the Department of Psychology at Baruch College. If you have any questions regarding your rights as a research participant, please contact the Baruch College's IRB Administrator: Keisha Peterson, (646) 312-3785, Keisha.Peterson@baruch.cuny.edu; 55 Lexington Ave, Box B 8-215 New York, NY 10010.

If you agree that you are 18 years of age or older, and consent to participate in the interview, please sign below:

Participant's signature (print name) **Date**

_____ _____

Investigator's signature **Date**

Angela R. Grotto 1/2/2012

Click the submit button to submit your signed form:

>> INSERT SUBMIT BUTTON HERE <<

Pilot Participant Study Guidelines

These guidelines will help you figure out if today is an appropriate time to begin the study. Your participation in this study should be during a normal workweek for you. So there should not be any significant or unusual work-related or personal events for you (e.g., business travel, vacation, holidays) during the study time period.

Once you click "Continue" below, the study will begin and you will be brought to the first online questionnaire which is to be completed at any point today. Later today you will receive the first of three daily e-mails from the study's researcher (Angela R. Grotto) with links to the questionnaire. These daily questionnaires should be completed at the end of each day (i.e., at your bedtime). Ideally, you should begin the study today, Monday, but that is not a requirement (see below for another option). Three days after the end of the three-day study period, you will receive an e-mail from the study's researcher (Angela R. Grotto) with a link to the final questionnaire, which you will have five days to complete.

***IMPORTANT:** If you need to begin the study on a different day than today, you can save this email, return to this webpage at a later time, and continue onto the first questionnaire on a day that works best for you this week.

Thank you again for your time and participation!

Click "Continue" to access the first questionnaire:

<< INSERT CONTINUE BUTTON HERE >>

Appendix H: Study 3 E-mail Invitation

Hello [Participant Name],

I am writing to ask you to participate in my dissertation study. The purpose of the study is to better understand how work intrudes on employees' personal lives. I am inviting participants and their spouses/partners to complete online questionnaires in three phases for a 10-day time period. First, you will complete a questionnaire on the first day of the study period (you and your spouse/partner can choose the day to begin the study together). Then you and your spouse/partner will complete a questionnaire every day for one week (i.e., 7 days) from the date you began the study. A few days after the one-week study period has ended, you will complete a final questionnaire.

Your participation and feedback will be very important for a new research study that is designed to gain a better understanding of how work sometimes intrudes on employees' personal lives. Given the demands of today's jobs and the sophisticated technology that employees regularly use as part of their jobs, work can easily and frequently interrupt your personal life. It is important to understand these experiences and how employees and their significant others are affected by the interruptions. If you and your spouse/partner agree to participate, you will receive a gift certificate for Amazon.com.

If both you and your spouse/partner are interested in participating in this research study, please review the attached study consent forms (separate forms are provided for you and your spouse/partner), print your names (which will serve as your signatures), and e-mail the forms back to me (angela.grotto@baruch.cuny.edu). After I receive your signed consent forms, you will receive an e-mail from me with more information about

the survey. If you have any questions, please feel free to reply to this e-mail and I will get back to you as soon as possible.

Appendix I: Study 3 Consent Forms

Focal Participant Consent Form

Thank you very much for agreeing to participate in this study. The information you provide will be critical to understanding the issue of how work interacts with our personal lives.

Angela R. Grotto, a doctoral student in the Industrial/Organizational Psychology Ph.D. Program at Baruch College and The Graduate Center of the City University of New York, is the Principal Investigator of this project, entitled "The Interactions of Work and Personal Life." The purpose of this study is to better understand how work intrudes on employees' personal lives.

You and your spouse/partner will participate in a 10-day study. Upon submitting this form, you will be transferred to another webpage that provides guidelines to help you and your spouse/partner to determine whether it is an appropriate time period for you to participate in the study. If you are ready to participate, then you will continue on to the first online questionnaire. The first questionnaire is to be completed on day one of the study and will take about 30 minutes to complete. As long as the researcher has received both you and your spouse/partner's consent forms, at the end of day one you will begin to receive the daily e-mails with links to your respective versions of the daily online questionnaire. This questionnaire should be completed at the end of each day around the same time (i.e., your bedtime) and will take about 15 minutes to complete. A few days after the one-week study period has ended, an e-mail will be sent to you only with a link to a final online questionnaire, which will take about 30 minutes to complete. You will

have one week to complete the final questionnaire and will receive two e-mail reminders to complete the questionnaire.

Sirota Survey Intelligence's SSL encryption is being used for all of the online questionnaires, and the data will be stored on their secure server. The survey data will be as secure as online communications can be. Per the requirements of the American Psychological Association, data from this study will be saved on a password-protected computer for 5 years after the project is complete before the data are destroyed. The data will be stored in a separate file accessible only to the researcher and her advisor. This consent form will be stored separately from your survey responses. Your survey responses will be assigned a random identification number and no personally identifying information will be stored with your responses. The results of this study may be disseminated through publications or presentations. Anonymity and confidentiality are guaranteed in the reporting of the data. Your name and email address will not be linked to your responses, and research findings will be reported in aggregate format.

You will receive an incentive from Zoomerang, as part of your agreement, for completing the first online questionnaire. As a way to show my appreciation for your full participation in the study, you as a couple will receive a bonus incentive of $25 if both you and your partner/spouse complete the entire ten-day study. If you would like to receive this incentive, you can provide your e-mail address at the end of the final questionnaire. Please be assured that your email address will not be linked to your responses and will be used only for the purpose of contacting you about your incentive. Your email address will not be sold to or shared with anyone else. You can also let me know if you would like to receive a summary of the study results by e-mail.

The only potential risk from participating in this study is any emotional or psychological discomfort you may experience when thinking about how work intrudes on your personal life. There are no known direct benefits of participating in this research. An indirect benefit of participation is gaining insight into how your work life interacts with your personal life.

Your participation is voluntary and you may discontinue participation at any time without loss of the incentive from Zoomerang, but you will not receive the bonus incentive if you do not complete the entire 10-day study.

Thank you again for your participation in the study! I will provide you with a copy of this signed form.

If you would like to know more about this study or have any questions about this study, please contact Angela R. Grotto, (Angela.Grotto@baruch.cuny.edu) in the Psychology Department at Baruch College, Box B 8-215, One Bernard Baruch Way, New York, NY 10010, 347-526-7871. The supervising faculty member on this project is Dr. Karen S. Lyness (646-312-3842; Karen.Lyness@baruch.cuny.edu) in the Department of Psychology at Baruch College. If you have any questions regarding your rights as a research participant, please contact the Baruch College's IRB Administrator: Keisha Peterson, (646) 312-3785, Keisha.Peterson@baruch.cuny.edu; 55 Lexington Ave, Box B 8-215 New York, NY 10010.

If you agree that you are 18 years of age or older, and consent to participate in the interview, please sign below:

Participant's signature (print name) Date

_____ _____

Investigator's signature **Date**

Angela R. Grotto 1/16/2012

I would like to receive a summary of the results: □

Click the submit button to submit your signed form:

>> INSERT SUBMIT BUTTON HERE <<

Spouse/Partner Consent Form

Thank you very much for agreeing to participate in this study. The information you provide will be critical to understanding the issue of how work interacts with our personal lives.

Angela R. Grotto, a doctoral student in the Industrial/Organizational Psychology Ph.D. Program at Baruch College and The Graduate Center of the City University of New York, is the Principal Investigator of this project, entitled "The Interactions of Work and Personal Life." The purpose of this study is to better understand how work intrudes on employees' personal lives.

You will be asked to participate in a daily online questionnaire with your spouse/partner. Once the researcher has received both you and your spouse/partner's consent forms, the seven-day study period will begin. At the end of each day you will receive daily e-mails with links to your respective versions of the daily online questionnaire. This questionnaire should be completed at the end of each day around the same time (i.e., your bedtime) and will take about 15 minutes to complete.

Sirota Survey Intelligence's SSL encryption is being used for the questionnaires and the data will be stored on their secure server. The survey data will be as secure as online communications can be. Per the requirements of the American Psychological Association, data from this study will be saved on a password-protected computer for 5 years after the project is complete before the data are destroyed. The data will be stored in a separate file accessible only to the researcher and her advisor. This consent form will be stored separately from your survey responses. Your survey responses will be assigned a random identification number and no personally identifying information will

be stored with your responses. The results of this study may be disseminated through publications or presentations. Anonymity and confidentiality are guaranteed in the reporting of the data. Your name and email address will not be linked to your responses, and research findings will be reported in aggregate format.

As a way to show my appreciation for your full participation in the study, you as a couple will receive a bonus incentive of $25 if both you and your partner/spouse complete the entire ten-day study.

The only potential risk from participating in this study is any emotional or psychological discomfort you may experience when thinking about how work intrudes on your spouse's/partner's personal life. There are no known direct benefits of participating in this research. An indirect benefit of participation is that you may gain more insight and understanding into your spouse's/partner's experiences with work intrusions.

Your participation is voluntary and you may discontinue participation at any time, but you will not receive the bonus incentive if you do not complete the entire 10-day study.

Thank you again for your participation in the study! I will provide you with a copy of this signed form.

If you would like to know more about this study or have any questions about this study, please contact Angela R. Grotto, (Angela.Grotto@baruch.cuny.edu) in the Psychology Department at Baruch College, Box B 8-215, One Bernard Baruch Way, New York, NY 10010, 347-526-7871. The supervising faculty member on this project is Dr. Karen S. Lyness (646-312-3842; Karen.Lyness@baruch.cuny.edu) in the Department of Psychology at Baruch College.

If you have any questions regarding your rights as a research participant, please contact the Baruch College's IRB Administrator: Keisha Peterson, (646) 312-3785, Keisha.Peterson@baruch.cuny.edu; 55 Lexington Ave, Box B 8-215 New York, NY 10010.

If you agree that you are 18 years of age or older, and consent to participate in the interview, please sign below:

Participant's signature (print name) **Date**

_____ _____

Investigator's signature **Date**

Angela R. Grotto 1/16/2012

Click the submit button to submit your signed form:

>> INSERT SUBMIT BUTTON HERE <<

Appendix J: Study 3 Guidelines

Since this study involves your spouse/partner, your participation should be during a normal workweek for you and your spouse/partner. During this time, the amount of waking nonwork hours you and your spouse/partner spend together should be typical. So there should not be any significant or unusual work-related or personal events for you or your spouse/partner (e.g., business travel, vacation, holidays) during the study time period.

Only if you provide your email address and your spouse/partner's email address will you receive the first of 7 daily e-mails, beginning today, from the researcher (Angela R. Grotto) with links to the daily questionnaires. The daily questionnaires should be completed at the end of each day (i.e., your bedtime).

On the final day of the 10-day study period, you will receive an e-mail from the researcher (Angela R. Grotto) with a link to the final questionnaire. You will receive two e-mail reminders to take the final survey so that you may receive your bonus completion incentive of $25.

***IMPORTANT: If possible, begin the study today. However, if you need to begin the study on a different day this week then save this email so that you may access the survey on a day that works best for you this week.**

Thank you again for your time and participation!

Click below to continue with the first questionnaire of the 10-day study period:

Appendix K: Study 3 Final Measures

Initial Questionnaire – Demographic Verification Questions

Living arrangement: Do you currently live with a spouse, partner, or significant other (1 = *yes*, 2 = *no*)?

Employment status: Are you currently working part-time (i.e., working less than 30 hours per week) or full-time (i.e., working at least 30 hours per week; 1 = part-time, 2 = full-time)?

Number of paid jobs: How many paid jobs are you currently working?

Type of employment: Are you currently…

1) A small business owner (1 = *yes*, 2 = *no*)?
2) Self-employed (1 = *yes*, 2 = *no*)?
3) A temporary/contract employee (1 = *yes*, 2 = *no*)?

Contact information

1) Provide your email address so the researcher can directly contact you for the remainder of the study. IMPORTANT: Your email address will NOT be stored with your survey responses. Your email address will be used only so the researcher can directly contact you for the remainder of the study AND so you can receive your $25 bonus completion payment.
2) Provide your spouse/partner's email address so the researcher can directly contact him/her for the remainder of the study. IMPORTANT: Your spouse/partner's email address will NOT be stored with any survey responses. The email address will be used only so the researcher can directly contact him/her for the remainder of the study.

3) Indicate which time zone you are in so that your daily email invitation can be sent to you and your spouse/partner at the appropriate time each evening. Type in only one of the following Time Zones: Eastern, Central, Mountain, or Pacific**.**

Job interdependence: Do you regularly…

1) Work with a team/work group (1 = *yes*, 2 = *no*)?
2) Work with internal and/or external customers, clients, or external vendors (1 = *yes*, 2 = *no*)?
3) Directly report to a manager or supervisor (1 = *yes*, 2 = *no*)?

Home-based worker/telecommuter status

1) What is the primary location in which your regularly scheduled work hours are performed (1=*office/work building/factory*, 2=c*lient/customer's work site*, 3=*home office*, 4=o*ther remote location (e.g., coffee shop, library, park)*)?
2) How many regularly scheduled work hours are performed in that location during a typical week (open-ended)?
3) How many regularly scheduled work hours are performed in nonwork locations (e.g., home) during a typical week (open-ended)?

Technology use (open-ended): What percent of your work day do you spend using communicative technology (e.g., PDA, tablet) and/or computer technology (e.g., Internet, e-mail, etc.)?

Marital status: What is your current marital status (1 = *single/not married*, 2 = *separated*, 3 = *divorced*, 4 = *widowed*, 5 = *married/living as married*)?

Spouse work status: What is your spouse/partner's work status (1=n*ot working (e.g., unemployed or a homemaker),* 2=*working part-time (i.e., working less than 30 hours per week),* 3=w*orking full-time (i.e., working at least 30 hours per week)*).

Job flexibility (Kossek et al., 2006):

1. How much autonomy is on your job (1 = *very little* to 7 = *very much*; excluded[1])?
2. To what extent does your job permit you to decide on your own about how to go about doing the work (1 = *very little* to 7 = *very much*; excluded)?
3. The job gives me considerable opportunity for independence and freedom in how I do the work (1 = *very inaccurate* to 7 = *very accurate*; excluded).
4. To what extent does your job permit you to decide on your own about WHERE the work is done (1 = *not at all* to 7 = *very much*)?
5. To what extent does your job permit you to decide about WHEN the work is done (1 = *not at all* to 7 = *very much*)?
6. I have the freedom to work wherever is best for me – either at home or at work (1 = *strongly disagree* to 7 = *strongly agree*)?
7. I do not have control over when I work (1 = *strongly disagree* to 7 = *strongly agree*; reverse coded).

Job insecurity: Indicate how much you agree or disagree with the following statements (1 = *strongly disagree* to 7 = *strongly agree*; Mauno et al., 2005):

1. I am worried about the possibility of being fired.
2. The thought of getting fired really scares me.
3. I'm not worried about my job's future (reverse coded).

4. I am certain that my job will continue for a long time (reverse coded).

Organizational time demands: Indicate how much you agree or disagree with the following statements (1 = *strongly disagree* to 7 = *strongly agree*; Thompson et al., 1999):

1. To get ahead at this organization, employees are expected to work more than 50 hours a week, whether at the workplace or at home.
2. Employees are often expected to take work home at night and/or on weekends.
3. Employees are regularly expected to put their jobs before their families.
4. To be viewed favorably by top management, employees in this organization must constantly put their jobs ahead of their families or personal lives.

*Integration boundary management strategy***:** With the increasing demands of work and personal life, employees may work in different ways to handle these demands. Indicate your level of agreement with each questions, using a scale ranging from 1 = *strongly disagree* to 7 = *strongly agree* (Kossek et al., 2006):

1. I only take care of personal needs at work when I am "on break" or during my lunch hour (excluded).
2. I prefer to not talk about my personal issues with most people I work with (excluded).
3. Throughout the workday, I deal with personal and work issues as they occur (excluded).
4. It would be rare for me to read non-work related materials at work (excluded).

5. I try to not think about my family or friends when at work, so I can focus (excluded).
6. I tend to integrate (i.e., blend) work and personal life roles through the work day.
7. I tend to handle emails related to my personal life separate from emails related to my work (reverse coded).
8. I tend to not talk about work issues with my family or friends (reverse coded).
9. I actively strive to keep my personal and work-life separate (reverse coded).

Work role identification: Indicate how much you agree or disagree with the following statements (1 = *strongly disagree* to 7 = *strongly agree*; Kanungo, 1982):

1. The most important things that happen to me involve my present job.
2. To me, my job is only a small part of who I am (reverse coded).
3. I am very much involved personally in my job.
4. Most of my interests are centered around my job.
5. I have very strong ties with my present job which would be very difficult to break.
6. Usually I feel detached from my job (reverse coded).
7. Most of my personal life goals are job-oriented.
8. I like to be absorbed in my job most of the time.

Family and personal role identification: Indicate how much you agree or disagree with the following statements (1 = *strongly disagree* to 7 = *strongly agree*; Yogev & Brett, 1985):

1. A great satisfaction in my life comes from my family roles (e.g., spouse/partner, parent, sibling).
2. A great satisfaction in my life comes from my other personal life (non-family) roles.
3. Quite often I plan ahead the next day's personal activities.
4. For me, days at home really fly by.
5. I am very much personally involved with my family members' lives.
6. I am very much personally involved with my friends' lives.
7. The most important things that happen to me are related to my family roles.
8. The most important things that happen to me are related to my personal life (non-family) roles.
9. I would be a less fulfilled person without my family life roles.
10. I would be a less fulfilled person without my personal life (non-family) roles.
11. I enjoy talking about my family life with other people.
12. I enjoy talking about my personal life with other people.
13. Nothing is as important as my family life roles.
14. Nothing is as important as my personal life (non-family) roles.

Conscientiousness: Indicate how much you agree or disagree with the following statements using a scale of 1 = *strongly disagree* to 7 = *strongly agree* (http://ipip.ori.org; "International Personality Item Pool: A Scientific Collaboratory for the Development of Advanced Measures of Personality and Other Individual Differences," 2002):

1. I am always prepared.

2. I pay attention to details.
3. I get chores done right away.
4. I like order.
5. I follow a schedule.
6. I am exacting in my work.
7. I leave my belongings around (reverse coded).
8. I make a mess of things (reverse coded).
9. I often forget to put things back in their proper place (reverse coded).
10. I shirk my duties (reverse coded).

Mindfulness: Indicate how much you agree or disagree with the following statements (1 = *strongly disagree* to 7 = *strongly agree; Brown & Ryan, 2003). All items are reverse coded.*

1. I could be experiencing some emotion and not be conscious of it until sometime later.
2. I find it difficult to stay focused on what's happening in the present.
3. I tend to walk quickly to get where I'm going without paying attention to what I experience along the way.
4. I tend not to notice feelings of physical tension or discomfort until they really grab my attention.
5. I forget a person's name almost as soon as I've been told it for the first time.
6. It seems I am "running on automatic" without much awareness of what I'm doing.
7. I rush through activities without being really attentive to them.

8. I get so focused on the goal I want to achieve that I lose touch with what I am doing right now to get there.
9. I do jobs or tasks automatically, without being aware of what I'm doing.
10. I find myself listening to someone with one ear, doing something else at the same time.
11. I find myself doing things without paying attention.
12. I find myself preoccupied with the future or the past.

Neuroticism: Indicate how much you agree or disagree with the following statements using a scale from 1 = *strongly disagree* to 7 = *strongly agree* (http://ipip.ori.org; "International Personality Item Pool: A Scientific Collaboratory for the Development of Advanced Measures of Personality and Other Individual Differences," 2002):

1. I often feel blue.
2. I dislike myself.
3. I am often down in the dumps.
4. I have frequent mood swings.
5. I panic easily.
6. I rarely get irritated (reverse coded).
7. I seldom feel blue (reverse coded).
8. I feel comfortable with myself (reverse coded).
9. I am not easily bothered by things (reverse coded).
10. I am very pleased with myself (reverse coded).

Daily Questionnaire: The following scales appeared only once in the daily questionnaire.

Dyad time: How much time did you spend with your spouse/partner today (hours and minutes)?

Work hours: Answer each of the following question ABOUT TODAY as accurately as possible:

1. What type of day was it today? (1 = *Regular work day*, 2 = *Regularly scheduled day off*, 3 = *Special paid day off (e.g., for vacation)*, 4 = *A personal/sick day*)
2. How many total hours (scheduled and unscheduled hours) did you work today?
3. How many of your total work hours today were part of your regular work schedule (i.e., part of your regular weekly work schedule)?
4. How many regular hours did you work while outside of your primary work location (e.g. at home) today?
5. How many of your total work hours today were unscheduled (i.e., not part of your regular weekly work schedule)?
6. How many unscheduled hours did you work while outside of your primary work location (e.g. at home) today?

Work role overload: Indicate the extent to which you agree with the following statements (1 = *strongly disagree* to 7 = *strongly agree*):

1. The amount of work I was expected to do today was too great.
2. I did not have enough time to get everything done at work today.
3. It felt like I had too much work for one person to do today.

Important definitions: Please read the following definitions before responding to the questions below.

1. Nonwork Hours: The part of your day that is beyond your normal work schedule or

typical work hours; i.e., your personal time. This includes the hours before or after work on a work day, or anytime on a nonwork day.

2. Nonwork Location: A location other than your traditional work location (i.e., office), e.g., your home, car, a store or restaurant, someone else's home, the gym, outdoors, etc.
3. Unexpected Work Intrusions: A work task/activity that unexpectedly interrupts your personal time, such as an unexpected phone call from a co-worker or an unexpected e-mail from your boss. Do NOT include planned work tasks/activities during your personal time, such as bringing work home with you or a scheduled late-night meeting.
4. Types of Work Intrusions: Only include unexpected intrusions that were initiated by someone other than yourself (e.g., phone call or email from your boss) during your personal time. Based on this definition, work-related thoughts or concerns do not count as unexpected intrusions.

Work intrusion frequency

1. Did you experience at least one unexpected work intrusion today during your personal time (1 = n*o*, 2 = y*es*)?
2. How many unexpected work intrusions did you experience today during your nonwork hours while in any nonwork location? IMPORTANT: Remember to think about intrusions that may have occurred very early this morning (1=*1*, 2=*2*, 3=*3*, 4=*4*, 5=*5 or more*)?

Daily hassles: Indicate whether each of these events occurred today (1=*no*, 2=*yes*), and if so, the severity of the event (1=*not at all stressful* to 7=*very stressful*):

1. Had an argument or disagreement with someone (nonwork)
2. If you had an argument or disagreement with someone today (nonwork), how

stressful was it?

3. Had an argument or disagreement with someone at work
4. If you had an argument or disagreement with someone at work today, how stressful was it?
5. Avoided an argument or disagreement with someone (nonwork)
6. If you avoided an argument or disagreement with someone today (nonwork), how stressful was it?
7. Avoided an argument or disagreement with someone at work
8. If you avoided an argument or disagreement with someone at work today, how stressful was it?
9. Experienced a stressful event at work
10. If you experienced a stressful event at work today, how stressful was it?
11. Had a stressful event happen at home
12. If you had a stressful event happen at home today, how stressful was it?
13. Had something bad happen to a relative or close friend
14. If you had something bad happen to a relative or close friend today, how stressful was it?
15. Had anything else bad or stressful happen in the past 24 hours?
16. If you had anything else bad or stressful happen in the past 24 hours, how stressful was it?

Daily Questionnaire: The following scales appeared once of the participant reported only one intrusion that day, or twice if the participant report more than one intrusion that day.

Positive and negative affect: Thinking about the FIRST [SECOND] intrusion, how

much does each of the following describe your state PRIOR to the intrusion (1=*not at all* to 7=v*ery much;* (Watson et al., 1988)**:**

1. Distressed
2. Upset
3. Irritable
4. Nervous
5. Jittery
6. Afraid

Work intrusion context: Still thinking about the FIRST [SECOND] intrusion today, answer the following questions:

1. When did the unexpected work intrusion occur? Provide the time of day (open-ended).
2. Who was with you at the time (1=n*o one, i.e., you were alone*, 2=*my significant other, e.g., spouse, partner, boyfriend, girlfriend*, 3=*my child(ren)*, 4=*other family member(s), e.g., parents, siblings*, 5=f*riends*, 6 = o*ther*)?
3. Where were you (1=*home*, 2=*other's home*, 3=*car or other form of transportation*, 4=s*tore or restaurant*, 5=*outdoors*, 6=*other nonwork location*)?
4. What were you doing at the time (1=*leisure activity, e.g., relaxing, reading, eating, watching TV, using computer for personal reasons*, 2=*attending a social or family event*, 3=*nonwork task or domestic responsibility, e.g., cleaning, cooking, errands, home maintenance*, 4=*child care*, 5 = *Elder care*, 6=*cannot remember*, 7=*other*)?
5. Who caused the work intrusion (1=*co-worker/colleague*, 2=*subordinate*, 3=*boss/manager/supervisor*, 4=*client/customer*, 5=*other*)?

6. What type of intrusion was it (1=*phone call/missed call*, 2=*voicemail notification*, 3=*text message*, 4=*email notification*, 5=*other*)?
7. What was the nature of the intrusion (1=*question/request for information*, 2=*request for help*, 3=*demand*, 4=*complaint*, 5=*information/update for you*, 6=*emergency*, 7=*work error*, 8=*other*)?

Work intrusion predictability: Based on your response to the previous question, to what extent was this particular type of intrusion the following (take into consideration who caused the intrusion; 1=*not at all* to 7=*very much*):

1. Unusual
2. Foreseeable
3. Common
4. Surprising

Work intrusion significance: And now indicate the extent to which you thought this particular work intrusion was (1=*not at all* to 7=*very much*):

1. Necessary
2. Important
3. Urgent
4. Something only you could address

Work intrusion response pressure

Still thinking about the FIRST [SECOND] intrusion you experienced today...

1. Did the intrusion require a response from you (1=*no*, 2=*yes*)?

To what extent did you feel that a response on your part was

2. Needed by others (e.g., boss/supervisor/manager, co-workers, client, or customer)

3. Part of your job responsibilities
4. Expected by the person causing the intrusion
5. Demanded by the person causing the intrusion
6. Expected by someone else other than the person causing the intrusion
7. Demanded by someone else other than the person causing the intrusion

To what extent did you feel pressure to respond from (1=*not at all* to 7=*very much*):

8. Yourself
9. The person causing the intrusion
10. Someone internal to your company, besides the person causing the intrusion
11. Someone external to your company (i.e., a client/customer)

Unplanned nonwork-to-work role switching response

1. Did you react to the intrusion in any way (1=*no*, 2=*yes*)? (IMPORTANT: Even thinking about work, listening to a voicemail, or reading an e-mail or text is considered a reaction. Select "No" only if you completely ignored the intrusion.)

How did you respond to the FIRST [SECOND] intrusion (1=*no*, 2=*yes*)?

1. Thought about it
2. Read an email or text message on your Smartphone
3. Read an email by logging onto a computer or tablet (e.g., iPad)
4. Replied to an email or text message on your Smartphone
5. Replied to an email by logging onto a computer or tablet (e.g., iPad)
6. Listened to a voicemail
7. Answered a phone call
8. Made a phone call

9. Did other work tasks not involving emails or phone calls
10. Other type of response

Unplanned nonwork-to-work role switching response length: About how much personal (i.e., nonwork) time did you spend today responding to this particular intrusion? (Use minutes and hours, e.g., 15 minutes or 1 hour and 10 minutes). IMPORTANT: Include any further follow-up work that was done later in the day during his/her personal time.

Unplanned nonwork-to-work role switching response impulse: Indicate the extent to which your response to the intrusion was (1=*not at all* to 7=*very much*):

1. Immediate (i.e., instant; you did not hesitate)
2. Automatic (i.e., you didn't even have to think about it)

Unplanned nonwork-to-work role switching response interference: And to what extent was responding to the intrusion (1=*not at all* to 7=*very much*):

1. Bothersome
2. Disruptive
3. Mentally distracting

Unplanned nonwork-to-work role switching mental difficulty:

To what extent was your response to the intrusion (1=*not at all* to 7=*very much*):

1. Easy
2. Challenging (i.e., difficult to do)

To what extent did your response to the intrusion (1=*not at all* to 7=*very much*):

1. Require mental effort
2. Require physical effort

Negative affect: Now indicate how much each of the following describes your state AFTER

experiencing this particular intrusion (1=*not at all* to 7=v*ery much**;*** (Watson et al., 1988)**:**

1. Distressed
2. Upset
3. Irritable
4. Nervous
5. Jittery
6. Afraid

Filler items for the "One Intrusion" daily questionnaire version

Did the following occur today during your nonwork hours because of this particular work intrusion (1 = *No*, 2 = *Yes*):

1. Had negative thoughts about work
2. Had positive thoughts about work
3. Thought about work in neither a negative or positive way

To what extent did you feel the following today (1 = *Not at all* to 7 = *A lot*):

1. Mentally tired
2. Emotionally drained
3. Physically tired

To what extent do you think your response to this intrusion (1 = *Not at all* to 7 = *Very much*):

1. Negatively affected your spouse/partner?
2. Positively affected your spouse/partner?

Filler items for "No Intrusion" questionnaire version

1. To what extent were you surprised that you did not experience any work intrusions today (1=*not at all* to 7=*very much*)?
2. Were you with anyone else during your personal time today (1=*no*, 2=*yes*)? (NOTE: your personal time can be before or after work if today was a workday.)
3. At which nonwork location did you spend most of your nonwork time today (1=*home*, 2=*other's home*, 3=*car or other form of transportation*, 4=*store or restaurant*, 5=*outdoors*, 6=*other nonwork location*)?
4. What nonwork task/activity did you spend the most time doing today (1=*leisure activity, e.g., relaxing, reading, eating, watching TV, using computer for personal reasons*, 2=*attending a social or family event*, 3=*nonwork task or domestic responsibility, e.g., cleaning, cooking, errands, home maintenance*, 4=*child care*, 5=*elder care*, 6=*cannot remember*, 7=*other*)?
5. Pretend that you did experience at least one work intrusion today. To what extent do you think you would have ignored the intrusion (1=*not at all* to 7=*very much*)?

To what extent did the following occur for you during your personal time today (1=*not at all* to 7=*very much*):

1. Had negative thoughts about work
2. Had positive thoughts about work
3. Thought about work in neither a negative or positive way

To what extent do you think a response to this intrusion (1=*not at all* to 7=*very much*):

1. Would have negatively affected your spouse/partner?
2. Would have positively affected your spouse/partner?

Final Questionnaire

Boundary strength at home: Indicate how much you agree or disagree with the following statements (1 = *strongly disagree* to 7 = *strongly agree*; Hecht and Allen, 2009):

1. I often do work at home (reverse coded).
2. I never do work on my personal time.
3. I frequently receive work-related correspondence at home (e.g., e-mail, faxes, or phone calls) (reverse coded).
4. I never take my work out of the "office" (reverse coded).
5. My personal time is my own.
6. It is not unusual for me to work over breakfast or dinner (reverse coded).
7. I often work "after hours" (reverse coded).
8. I often deal with work-related issues away from work (reverse coded).

Nonwork permeability: Indicate how often you perform the following behaviors (1 = *never* to 7 = *always*; Clark, 2002):

1. I receive work-related calls while I am at home.
2. I have work-related items at my home.
2. I think about work-related concerns while I am at home.
3. I hear from people related to my work while I am at home.
4. I stop in the middle of my home activities to address a work concern.
5. I take care of work-related business while I am at home.

Work-to-nonwork interference: Indicate how much you agree or disagree with the following statements (1 = *strongly disagree* to 7 = *strongly agree*; Carlson et al., 2000):

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

Burnout: Indicate how much you agree or disagree with the following statements (1 = *strongly disagree* to 7 = *strongly agree*; Demerouti et al., 2003):

1. I always find new and interesting aspects in my work (reverse coded).
2. There are days when I feel tired before I arrive at work.
3. It happens more and more often that I talk about my work in a negative way.

4. After work, I tend to need more time than in the past in order to relax and feel better.
5. I can tolerate the pressure of my work very well (reverse coded).
6. Lately, I tend to think less at work and do my job almost mechanically.
7. I find my work to be a positive challenge (reverse coded).
8. During my work, I often feel emotionally drained.
9. Over time, one can become disconnected from this type of work.
10. After working, I have enough energy for my leisure activities (reverse coded).
11. Sometimes I feel sickened by my work tasks.
12. After my work, I usually feel worn out and weary.
13. This is the only type of work that I can imagine myself doing (reverse coded).
14. Usually, I can manage the amount of my work well (reverse coded).
15. I feel more and more engaged in my work (reverse coded).
16. When I work, I usually feel energized (reverse coded).

Physical health symptoms: How often in the past two weeks have you suffered from the following (1 = *never* to 7 = *very often*; Geurts et al., 2003):

1. Pain in the chest or heart area
2. Short of breath
3. Headache
4. Upset stomach
5. Bloated stomach
6. Dizziness
7. Fatigue

8. Tingling limbs
9. Being listless
10. Pain or aches in muscles or bones
11. Backache
12. Feel tired sooner than you would consider normal
13. Get up feeling tired and unrested in the morning

Organization-based self-esteem: Indicate how much you agree or disagree with the following statements (1 = *strongly disagree* to 7 = *strongly agree*; Pierce et al., 1989):

1. I count in my workplace.
2. I am taken seriously in my workplace.
3. I am important part of my workplace.
4. I am trusted in my workplace.
5. I can make a difference in my workplace.
6. I am valuable part of my workplace.
7. I am helpful in my workplace.
8. I am cooperative in my workplace.

Gender: Indicate your g*ender* (0 = *male*, 1 = *female*).

Parental status

1. Are you a parent (0 = *no*; 1 = *yes*)?
2. If you are parent with children currently living with you, how many children are under the age of five (open-ended)?

Work hours:

1. How many hours did you work in your traditional workplace (e.g., office) this past week (open-ended)?
2. How many hours did you work beyond your traditional workplace (e.g., home) this past week (open-ended)?
3. How many hours do you typically work in your traditional workplace (e.g., office) during an average week (open-ended)?
4. How many hours do you typically work beyond your traditional workplace (e.g., home) during an average week (open-ended)?

Organizational tenure: How long have you been working at your current organization (1 = *0 to 6 months*, 2 = *6 months to 1 year*, 3 = *1 to 3 years*, 4 = *3 to 5 years*, 5 = *5 to 10 years*, 6 = *more than 10 years*)?

Salary: What is your annual salary (in whole dollar amounts)?

Partner Questionnaire

1. *Dyad Time*: How much time did you spend with your spouse/partner today?

   _____ Hours _____ Minutes

Perceptions of Partner's Work Intrusions

1. Did your spouse/partner experience at least one unexpected work intrusion during his/her personal time today? (1 = *no*, 2 = *yes*)
2. How many unexpected work intrusions did your spouse/partner experience today during his/her personal time while in any nonwork location? (IMPORTANT: Remember to think about intrusions that may have occurred very early this morning.)_____
3. Thinking of the intrusions that your spouse/partner experienced today, how many

times did s/he respond in any way? _____

Perceptions of Partner's Unplanned Nonwork-to-Work Role Switching: To what extent do you think his/her response(s) was (1 = *not at all* to 7 = *very much*):

1. Bothersome to him/her
2. Disruptive to what s/he was doing at the time

To what extent do you think his/her response(s) was (1 = *not at all* to 7 = *very much*):

1. Mentally distracting for him/her
2. Easy for him/her to do
3. Challenging for him/her (i.e., difficult to do)

To what extent do you think your spouse/partner's response(s) to the intrusion(s) (1 = *not at all* to 7 = *very much*):

1. Required physical effort on his/her part
2. Required mental effort on his/her part

Daily Hassles:

1. Did you have an argument or disagreement with someone today (1 = *no*, 2 = *yes*)?
2. If you had an argument or disagreement with someone today (nonwork), how stressful was it (1 = *not at all stressful* to 7 = *very stressful*)?
3. Did you avoid an argument or disagreement with someone today (1 = *no*, 2 = *yes*)?
4. If you avoided an argument or disagreement with someone today (nonwork), how stressful was it (1 = *not at all stressful* to 7 = *very stressful*)?
5. Did you have a stressful event happen at home (1 = *no*, 2 = *yes*)?
6. If you had a stressful event happen at home today, how stressful was it (1 = *not at all stressful* to 7 = *very stressful*)?

7. Did you have something bad happen to a relative or close friend (1 = *no*, 2 = *yes*)?
8. If you had something bad happen to a relative or close friend today, how stressful was it (1 = *not at all stressful* to 7 = *very stressful*)?
9. Did you have anything else bad or stressful happen in the past 24 hours (1 = *no*, 2 = *yes*)?
10. If you had anything else bad or stressful happen in the past 24 hours, how stressful was it (1 = *not at all stressful* to 7 = *very stressful*)?

Affect: To what extent did you feel the following today (1 = *not at all* to 7 = *very much*):

1. Distressed
2. Upset
3. Irritable
4. Nervous
5. Jittery
6. Afraid
7. Active
8. Interested
9. Excited
10. Strong
11. Inspired
12. Alert

Filler Items: Indicate the extent to which you agree with the following statements (1 = *strongly disagree* to 7 = *strongly agree*):

1. You were surprised that your spouse/partner did not experience any work

intrusions today.

2. You were surprised that your spouse/partner did not respond to any work intrusions today.
3. The demands of your spouse/partner's work interfered with home and/or family life today.

[1] "Excluded" measurement items will not be included in the present study.

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