



Monograph

Work–nonwork boundary management profiles: A person-centered approach

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ABSTRACT

The goal of this paper is to advance the measurement and theory of work–nonwork boundary management styles. Boundary management styles are defined as the approaches individuals use to demarcate boundaries and attend to work and family and other nonwork roles, given identity centralities and perceived boundary control. We argue that research should be augmented with a person-centered approach, which examines how psychological measures are integrated into configurations. Integrating role and boundary theories, we identify three main characteristics of work–nonwork boundary management: (1) cross-role interruption behaviors (work to nonwork, and nonwork to work interruptions); (2) identity centrality of work and family roles, and (3) perceived control of boundaries. Using a variable-centered approach, we refined and validated these measures to create an assessment (Work–Life Indicator) that captured boundary management profiles. The profiles reflect how interruption behaviors, identity centralities, and boundary control interrelate to cluster into profiles, a set of psychological characteristics organized into a pattern of work–nonwork boundary functioning. We identify boundary management profiles and examine their relationships to key work–family outcomes. Regardless of the level and direction of interruption behaviors and centrality of work–family identities, we found that low control boundary management profiles (reactors, job warriors) tended to experience more negative work and family outcomes than did high control profiles (fusion lovers, dividers, family guardians, eclectics).

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1. Introduction

Scholarly and practical interest in employees' boundary management styles (Kreiner, Hollensbe, & Sheep, 2009; Matthews, Barnes-Farrell, & Bulger, 2010; Mathews and Barnes-Farrell, 2010; Nippert Eng, 1996) and their role in effectiveness on and off the job are growing. This attention can be attributed to societal shifts reshaping the borders of work and nonwork relationships (Kossek & Distelberg, 2009). The rise of wireless technology makes it possible for many individuals to have 24–7 communication with work concerns in increasingly global and geographically dispersed operations. Also, the large numbers of workers in single parent, dual career, or sandwiched (caring for elders and children) families (U.S. BLS, 2011), coupled with the growing availability of flexible work arrangements (e.g., telework, flextime) have increased employee self-regulation of work and nonwork boundaries (Rothbard, Phillips, & Dumas, 2005).

Defined as the approaches individuals use to demarcate boundaries and attend to work and family and other nonwork roles, given identity centralities and boundary constraints (Kossek & Lautsch, *in press*), boundary management styles have been linked to work-to-family and family-to-work conflict (Kossek, Lautsch, & Eaton, 2006; Matthews et al., 2010), psychological distress, and

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intention to turnover (Kossek et al., 2006). Researchers agree that individuals systematically differ in the ways in which they manage boundaries between work and family domains (Kreiner et al., 2009); and that more research is needed to identify and measure how boundary management characteristics relate to work and family outcomes (Matthews et al., 2010). In this paper, we use the terms “work–family”, “work–nonwork”, and “work–life” interchangeably and view “work–family” issues as an important type of work–nonwork relationship.

Most quantitative research has taken a variable-level approach examining relationships between independent variables assessing boundary management characteristics (e.g., preference for integration) and dependent variables (e.g., work–family conflict) (c.f., Rothbard et al., 2005). Some scholars argue that variable-centered approaches, which average scores aggregated across individuals, do not necessarily provide insight into the relationships between variables as they are integrated within a person's social system (Hart, Atkins, & Fegley, 2003); and may not even be representative of many people in a particular sample (von Eye & Bergman, 2003). We contend that a *person-centered approach* examining how psychological measures comprise configurations of personal attributes (Crockett, Moilanen, Raffaelli, & Randall, 2006) is valuable to capture boundary management functioning. Although underutilized in the work–family field with the exception of research on types of dual-earner families (Crouter & Manke, 1997; Cullen, Hammer, Neal, & Sinclair, 2009), research on psychological functioning on many topics from adolescent adjustment (Crockett et al., 2006) to alcoholism (Muthen & Muthen, 2000) has demonstrated the value of augmenting variable-level research with person-centered approaches. Rather than viewing boundary characteristics separately, a person-centered approach to boundary management allows for identification of distinct profiles, giving insight into boundary management styles as a set of psychological characteristics organized into patterns.

1.1. Study objectives and organization

This study makes several contributions by addressing several key issues regarding boundary management styles and is organized into three sections. First, given that boundary management measurement and construct development need to be advanced (Matthews et al., 2010), we validate measures of boundary management characteristics to be used in creating person-centered profiles. Following this, we use a person-centered approach (cluster analysis) to identify different constellations of psychological variables necessary for understanding boundary management styles. We argue that a boundary management style is a combination of interruption behaviors separating and integrating work and family domains (Nippert Eng, 1996), role identity centrality (Settles, 2004), and perceived boundary control (Karasek, 1979). Few quantitative studies consolidate these variables into multidimensional profiles, yet qualitative and theoretical research (Kossek & Lautsch, 2008) suggest that these measures do not operate independently but as part of constellation of variables within individuals. We seek to broaden the field's focus from separate analysis of separation and integration by moving toward a joint examination of the combination of behavioral orientations regarding integration/separation with appraisals of role identities and boundary control. In doing so, we ascertain profiles that are conceptually richer for understanding individuals' work–family patterns than looking at variables as separate processes. For example, we examine a range of identity centralities that are often studied separately: work centric, family centric, dual centric (high on both work and family centralities), and nonwork eclectic (neither work nor family centric) orientations, linking them to boundary management functioning. We identify often overlooked asymmetrical styles pertaining to imbalanced directional patterns of integrating or separating behaviors, identities, and control. For example, individuals higher on family or nonwork identities and perceived boundary control tend to interrupt work for family/nonwork issues, but rarely interrupt family/personal life for work matters. Others higher on work identity and boundary control tend to interrupt family for work demands, but not the reverse, protecting work from family interruptions.

Third, we explore how boundary management profiles relate to important work and family outcomes. We conduct holistic analysis linking profiles to outcomes, showing that what matters more for work–family effectiveness than the mere act of integrating or separating may involve the degree to which one also feels in control of boundaries and is able to engage in the amount of symmetry and frequency in interruption behaviors that fit with identities of higher salience.

In sum, our approach takes three steps. First, we validate and refine measures of three key boundary management characteristics (cross-role interruption behaviors, identity centrality of work and family roles, and boundary control). Second, we examine if there are identifiable configurations or profiles of work nonwork boundary management. Third, we investigate how boundary management profiles vary in relation to key work–family outcomes.

2. Characteristics of boundary management styles

Scholarly research describes the ways individuals separate or integrate boundaries while carrying out work and nonwork roles (Ashforth, Kreiner, & Fugate, 2000; Clark, 2000; Kossek, Noe, & DeMarr, 1999; Nippert Eng, 1996). Much of the seminal work has been qualitative, providing rich descriptions of the tactics individuals use to manage the segmentation and integration of boundaries (Kossek & Lautsch, 2008; Kreiner et al., 2009; Nippert Eng, 1996). Subsequent quantitative studies have augmented this research by developing univariate scales measuring boundary management characteristics such as boundary flexibility, inter-domain transitions, (Matthews et al., 2010), and preferences for separation and integration (Rothbard et al., 2005). Other research has examined relationships between perceived psychological job control and boundary management approaches (Kossek et al., 2006). These studies typically assess individuals as being “high to low” on segmenting to integrating tendencies.

Given the need to synthesize these streams, we integrate theory of role taking (Katz & Kahn, 1978) and role identity salience (Settles, 2004) with research on job control (Karasek, 1979) and psychological boundary management (Kossek et al., 2006). We

define boundary management styles as the approaches individuals use to demarcate boundaries and attend to work and family and other nonwork roles, given identity centralities and boundary constraints. We propose three main characteristics that are relevant to work–nonwork boundary management: (1) cross-role interruption behaviors (work to nonwork and nonwork to work), (2) identity centrality of work and family roles, and (3) perceived control of boundaries. We first define these constructs, and then propose hypotheses supporting validation and cluster analyses.

2.1. Cross-role interruption behaviors

Recent work–life trends have caused work and family subsystems to increasingly overlap, generally resulting in increased frequency and self-regulation of boundary role-crossings (Ashforth et al., 2000). As Katz and Kahn (1978) suggest, when individuals are managing multiple roles with different expectations in one or more social systems, they make choices to engage in role taking behaviors that are salient with important identities (Thoits, 1992). At the daily micro behavioral level, a key role-taking behavior is interrupting one role (work) to attend to another role (family) and vice versa.

Cross-role interruption behaviors refer to the degree to which individuals allow interruptions from one role to another. They pertain to the gate-keeping demands of managing multiple roles across social systems. Boundaries between work and nonwork roles (e.g., work and family) are “socially constructed” by individuals, which suggests they are active participants in the co-construction of boundaries (Ashforth et al., 2000). Individuals develop preferences for work–nonwork boundaries that exist on a continuum from segmentation, where work and nonwork roles have high separation, to integration, where work and nonwork roles are often combined. Segmented boundaries are more inflexible and roles are rigidly conducted at specific places and times. They are impermeable with few cross-role interruptions. In contrast, integrated boundaries have high overlap and are flexible with variability in timing and place. They are permeable with many cross-role interruptions (Nippert Eng, 1996).

Our measures assessing cross-role interruption behaviors were developed based on theory from Greenhaus and Beutell's (1985) identification of behavior-based conflict. We also draw on Kossek and Ozeki's (1998) research showing that measures with specific directions of conflict are usually better predictors of work–family outcomes than are general measures. Most research focuses on the general enactment of cross-role interruptions or behavior-based conflicts, but does not capture employee-enacted behaviors in managing the direction of the interruptions. For example, does the interruption involve an employee attending to interruptions from work to family (e.g., checking work email when at home) or from family to work (e.g., taking a text from a family member while working)? We argue that researchers should give greater attention to the *directionality* in the measurement of boundary-interruptions. Our proposed measures of work–family interruption behaviors and family to work interruption behaviors add to the literature by measuring the degree to which role-taking may be symmetrical (allowing equal interruptions from work to family and family to work) or asymmetrical (allowing more interruptions in one domain than another). We help refine the construct of boundary interruption behaviors by linking its grounding to role-taking behaviors as one form of boundary crossing phenomenon.

2.2. Identity centrality of work and family roles

The centrality of work and family identities is the second characteristic relevant to boundary management. Grounded in role identity theory (Burke & Reitzes, 1991), role centrality reflects identity salience and indicates the relative value the individual places on his or her different identities, which is often related to the time and energy invested in a role (Thoits, 1991).

Work identity centrality refers to the salience of an occupational career, such as one's identification with being a professor, a manager, a doctor, or a CEO of a Fortune 500 company. Family identity centrality includes the degree of identification with a family role; for example, one's identification with being a parent, a sibling, a son, or a daughter. Our measurement of family identity uses the term *family* broadly. Many work–family scholars agree that nearly all employees including single people perceive themselves as having family identities (relations with nonwork persons with strong kin-like attachments) to invest in relative to work (Casper, Weltman, & Kwesiga, 2007; Rothausen, 1999). Overall, we assume people differ in terms of the importance they place on different roles. Some people elevate their family identity over other identities and are considered family-centric, meaning that they prioritize family over career. Other people place greater value on their career, prioritizing work over family, and can be considered work-centric.

Dual-centricity refers to those individuals who elevate both work and family similarly; they view their job and family with equal identity salience (Lobel & St. Clair, 1991). There may also be people low on both work and family centrality. These individuals could be hobbyists, athletes, or church or community volunteers whose primary identity is outside the realm of career or family. We add to the literature by not only developing measures of family or work identity centrality (cf Kossek et al., 2006; Matthews et al., 2010), but once validating these measures of work and family centrality, we will use them in different combinations in profile development to explore how some individuals may also have dual centric or other life role centric identities linked to boundary management styles.

2.3. Perceived boundary control

The third characteristic of boundary management is perceived boundary control over boundary crossings. Boundary control perceptions differ from interruption behaviors and identities as they are not personal traits, but psychological interpretations of perceived control over one's boundary environment.

Hall and Richter (1988) as well as Clark (2000) have explained flexibility as the degree to which the individual perceives the ability to contract or expand a boundary. Relevant to boundary control perceptions is Karasek's (1979) job strain model, which holds that stress can occur when the demands of the context are greater than the degree of decision-making freedom (discretion) to control job demands. Individuals with higher perceived control will believe they can control the timing, frequency, and direction of boundary crossings to fit their identities and multiple role demands. Conversely, individuals with less control often may perceive they cannot control boundary crossings to fit their identities. Empirical support for these relationships is found in previous research on perceived psychological job control over boundaries. In a study of teleworkers, Kossek et al. (2006) proposed a psychological job control scale. Their scale is built on Hackman and Oldham's (1980) job control scale, which measures the job characteristic of control over how the work is done. They added items on perceived control over the timing and location of work. Their study found that the extent to which individuals felt in control of where, when, and how work was done was a stronger predictor of work–family conflict than formally integrating boundaries via use of a telework policy (Kossek et al., 2006). We build on this study suggesting it is useful to measure psychological perceptions of the ability to control boundaries as a key characteristic of boundary management styles.

3. Convergent, discriminant, and criterion-related validity hypotheses

To establish convergent validity, we investigated the relationships between the boundary management measures and theoretically-related constructs from the literature. These measures include family–work conflict, work–family conflict (Netemeyer, Boles, & McMurrian, 1996), work–family integration (Ilies, Wilson, & Wagner, 2009), psychological job control (Kossek et al., 2006), and work engagement (Britt, Castro, & Adler, 2005). Family–work conflict is the extent to which participants' family responsibilities interfere with their work responsibilities. Work–family conflict is the extent to which individuals describe work responsibilities as interfering with their family responsibilities. Our two cross-role interruption behavior scales (work to nonwork and nonwork to work) measure the degree to which the individual self-regulates boundaries to allow nonwork to interrupt the work role and vice versa. Given the similarity in the direction of role crossover, we expect Netemeyer et al.'s family–work conflict scale to be positively correlated with our nonwork interrupting work behaviors scale and Netemeyer et al.'s work–family conflict scale to be positively correlated with our work interrupting nonwork behaviors scale. Ilies et al.'s (2009) work–family integration scale assesses the degree to which individuals keep their work/family roles and responsibilities separate from one another as a global construct without specifying direction. We therefore expect the work–family integration scale to be positively correlated with both nonwork interrupting work behaviors and work interrupting nonwork behaviors measures.

Although Kossek et al.'s (2006) measure of psychological job control assesses job control, it is not directly focused on control over work and family boundaries. We therefore developed a new measure called boundary control, which focuses on the individual's perceived ability to control how he or she manages the boundaries between work and family. Because both the psychological job and boundary control scales address the issue of control, we expect a positive correlation between them.

Engagement (Britt et al., 2005) measures the extent to which the individual invests in his or her work role. The work identity scale developed in the current study assesses the degree to which one views his or her work role as central to his or her life. Given the focus both measures place on work role investment and identity, we expect these measures to be positively correlated. In summary, we propose the following convergent validity hypotheses:

Hypothesis 1a. Nonwork interrupting work behaviors are positively related to family–work conflict and work–family integration.

Hypothesis 1b. Work interrupting nonwork behaviors are positively related to work–family conflict and work–family integration.

Hypothesis 1c. Boundary control is positively related to psychological job control.

Hypothesis 1d. Work identity is positively related to engagement.

To establish discriminant validity evidence, we correlated our measures with other measures from the literature that are theoretically dissimilar. Given our interest in using these measures to build profiles linked to outcomes of work–family effectiveness, we focused on the relationships between nonwork interrupting work behaviors and work interrupting nonwork behaviors scales with family-to-work positive spillover (Hanson, Hammer, & Colton, 2006). Family-to-work positive spillover is defined as the extent to which positive emotions about family or home-related domains spillover to work. Because our cross-role interruption behavior scales focus on behaviors rather than transfer of emotions or identity, we expect weak correlations among these variables. Because the work engagement (Britt et al., 2005) and work identity scales assess the extent to which an individual invests in the work role, we also expect these scales to exhibit only weak correlations with our family identity measure.

Hypothesis 2a. Nonwork interrupting work behaviors are weakly correlated with family-to-work positive spillover.

Hypothesis 2b. Work interrupting nonwork behaviors are weakly correlated with positive family-to-work spillover.

Hypothesis 2c. Family identity is weakly correlated with work identity and engagement.

To establish criterion-related validity, we examined the relationships between the measures of boundary management characteristics and criteria that are frequently used in the work and family literature. These include intention to turnover (Boroff &

Lewin, 1997), work–schedule fit (Barnett & Brennan, 1997), time adequacy (Van Horn, Bellis, & Snyder, 2001), and psychological distress (Kessler et al., 2003). Intention to turnover assesses the extent to which an individual is likely to leave his or her job. Work–schedule fit assesses the extent to which one's work arrangement meets the needs of various stakeholders such as a boss or a family member. Time adequacy captures the extent to which an individual feels he or she has enough time to attend to self-care and family needs, such as spending time with children and family, preparing healthy meals, and keeping in shape. Psychological distress assesses the extent to which an individual experiences negative psychological emotions or perspectives.

We expect the five measures of boundary management characteristics to significantly relate to these work–family outcomes. Given the long literature on control characteristics as predictors of stress, conflict, and withdrawal, we predict that boundary control will have the strongest relationship with these outcomes (Tetrick & LaRocco, 1987). Sutton and Kahn (1987) highlight the role of control in ameliorating the relationship between role conflict and distress. We expect boundary control to be negatively correlated with intention to turnover and psychological distress and positively correlated with work–schedule fit and time adequacy.

We also expect that interruption behaviors from work to nonwork will be negatively correlated with work–schedule fit and time adequacy. One explanation for this is because people exhibiting more interruption behaviors from work to nonwork will feel more time pressures and schedule challenges as they will experience process-losses in efficiency in personal life enactment and reduced flow in their nonwork tasks from having higher interruptions from work to nonwork life (Kossek & Lautsch, 2008). We expect that individuals with higher levels of work to nonwork interruption behaviors will have higher levels of psychological distress. The rationale is these individuals will have less time and ability to attend to family demands or personal needs. They will be less able to psychologically detach from work and have less time to recover or take a break from work demands, which is necessary to reduce job stress (Sonnetag, Binnewies, & Mojza, 2008). We did not have any a priori hypotheses regarding how the identity measures relate to the criterion measures.

Hypothesis 3a. Boundary control is negatively correlated with intention to turnover and psychological distress and positively correlated with work–schedule fit and time adequacy.

Hypothesis 3b. Work to nonwork interruption behaviors is negatively correlated with work–schedule fit and time adequacy and positively related to psychological distress.

4. Development of boundary management profiles

Given the previous research on the importance of studying configured work–family relationships (e.g., Crouter & Manke, 1997; Cullen et al., 2009), we identified patterns of boundary management characteristics. Although most boundary management studies use a variable-centered approach examining linear relationships separately between antecedents and outcomes, examining work–nonwork measures in isolation makes it difficult to understand the overall psychological tradeoffs people make as they balance their work–nonwork responsibilities in their contexts (Crouter & Manke, 1997). Person-centered approaches group individuals into similar clusters that are distinct from other groups, yet internally alike in patterns on a set of predictor variables (Sinclair, Sommers, Cullen, & Wright, 2005). Person-centered approaches consider the co-existence of multiple aspects of boundary management as a holistic process.

Building on qualitative and theoretical work (Ashforth et al., 2000; Nippert Eng, 1996), Kossek and Lautsch (2008) identified three boundary management styles, each with high and low identity alignment and boundary control. They included (a) Separators (separating work and nonwork roles); (b) Integrators (blending work and nonwork roles); and (c) Volleys (a hybrid style alternating between the two prior approaches). Within each of these groups, they identified positive and negative subtypes where some integrators, volleys, or separators reported higher or lower boundary control and higher or lower alignment with role identities. These styles were exploratory and grew out of a quantitative study of teleworkers (Kossek et al., 2006) that was followed up over the next several years with qualitative interviews with employees in other boundary management contexts such as independent management consultants, factory workers, among other occupations (Kossek & Lautsch, 2008). Although this research suggested that person-centered work–nonwork boundary management styles exist, and differentially relate to outcomes, Kossek and Lautsch (2008) did not validate their measures used in the profiles or quantitatively link them to outcomes.

Accordingly, we employed cluster analysis to identify boundary management styles to identify overarching patterns to incorporate a person-centered approach. Because cluster analysis is by its nature exploratory, we offer only general hypotheses here and in the sections below on outcome linkages. We do, however, review the literature suggesting how the three boundary management characteristics we identified might be systematically linked. Research suggests that role-crossing interruption behaviors are often related to patterns of identity salience and boundary control perceptions. Synthesis of Katz and Kahn's (1978) work on boundary-crossing behaviors with research on perceived boundary control (Kossek et al., 2006) suggests that individuals are likely to engage in higher interruption behaviors pertaining to the directions of roles in which they have high identity salience and for which they also have perceived control. Some individuals are unicentric and identify significantly more with one role such as work, family, or other nonwork interests; these individuals may be asymmetrical in role-crossing interruption behaviors. Family-centric and nonwork-centric individuals who have higher control may engage in nonwork interrupting work behaviors, but may be less likely to engage in work interrupting nonwork behaviors (Kossek & Lautsch, 2008). Work-centric individuals with higher control will be more likely to engage in work interrupting nonwork behaviors, but less likely to engage in nonwork interrupting work behaviors. Other groups may have more symmetry in interruption behaviors in relation to identities and

boundary control. Previous studies suggest that dual-centric individuals (Lobel & St. Clair, 1991), those who have higher investment in both work and family identities regardless of their level of control, may have styles where they will engage in higher interruption behaviors in both directions (work to nonwork, nonwork to work).

Hypothesis 4. Employees are differentially clustered into distinct boundary management profiles with varying configurations of work and family identities, symmetry of cross-role interruption behaviors, and perceived boundary control.

4.1. Boundary management profiles and work–family outcomes

A person-centered approach not only identifies a global approach for work–family boundary functioning but also identifies potentially different pathways for moderating and mediating processes affecting work–family outcomes. This is critical for advancing research understanding and is practically important for developing interventions tailored to individuals' needs.

Each of the three characteristics of boundary management styles (boundary control, identities, and cross-role interruption behaviors) has separately been found to be important for work–family outcomes. Some research suggests that higher congruence or fit with alignment preferences for cross-role boundary behaviors is crucial for positive outcomes. Although they did not measure actual use of formal boundary blurring practices, Rothbard et al. (2005) found that individuals with preferences for segmentation were more likely to experience lower work–family outcomes, the more that their employer made available work–life policies such as flextime and telework that would support increased boundary-crossing behaviors. Other scholars have found that the more that individuals integrate boundaries (Kossek et al., 2006) and prefer boundary flexibility (Matthews et al., 2010), the higher the work–family conflict. Kreiner et al. (2009) suggest that lower congruence of boundary-crossing behaviors with salient work–family identities increases boundary violations and predicts negative work–family outcomes. Still others suggest that having higher control over boundaries (Kossek et al., 2006) and schedule control (Kelly & Moen, 2007) relates to positive work–family outcomes.

In a person-centered study, Kossek and Lautsch (2008) found that unique profiles of interruption behaviors related to separating or volleying in ways that were aligned with higher control and greater alignment with salient work–family identities were differentially related to work–family outcomes such as work–family conflict and psychological distress. Their strongest findings were that high control profiles (called fusion lovers, work or family firsters, and quality timers) regardless of degree of boundary crossing behaviors and array of identity centralities were more likely to report positive work–family outcomes than low control profiles (referred to as reactors, job warriors, and captives). Overall, they found that what was more important for predicting positive work–family outcomes than interruption behaviors in and of themselves (whether one saw themselves as a separator, integrator, or volleyer) was feeling in higher control of one's style. Positive outcomes were also more likely to be linked to perceiving alignment in the direction and types of boundary interruptions in ways that supported identity alignment.

While they did not specifically examine boundary control, Moen, Kelly, and Huang (2008) examined linkages between schedule control and different configurations of high demand and low demand work and family environments for individuals in many life course stages. Referring to these profiles, job ecologies, they found that perceived work–time control was related to every life-course fit dimension.

Drawing on previous research, we explored these likely differences between profiles and study outcomes. We examined the relationship of boundary management profiles to two outcome categories most often cited in the work–family literature: work–life effectiveness (work–family and family–work conflict, distress, time adequacy and work–schedule fit) and attachment to work (engagement and intention to turnover). Positive work–life relationships have been repeatedly shown to be related to engagement at work, intention to turnover, satisfaction with the time and timing of work, work–family and family–work conflict, psychological distress, and time adequacy. (For a review, see Eby, Casper, Lockwood, Bordeaux, & Brinley, 2005). Overall, based on the literature, boundary management profiles are likely to relate to these outcomes with noticeable differences between clusters, particularly for high and low control profiles.

Hypothesis 5a. Boundary management profiles (configurations of cross-role interruption behaviors, boundary control, and identity centrality of work and family roles) vary significantly on key work and family outcomes.

Hypothesis 5b. Regardless of the level of interruption behaviors and centrality of work–family identities, low control boundary management profiles relate to more negative work and family outcomes than high control profiles.

5. Method

5.1. Participants and procedure

Two managerial samples were obtained several months apart, so that scales developed and validated using the first sample could be confirmed in the second sample. Both samples consisted of practicing managers attending leadership development courses at a leading management education center who completed an online survey. As an incentive to complete the survey, respondents received feedback on their boundary management behaviors, access to a webinar on this topic, and a publication on leadership. Two hundred and seventy-eight managers comprised sample 1, and three hundred and thirteen managers comprised sample 2.

In sample 1, 82% of participants were Caucasian, 58.1% were women, 72% were married, and 59% had at least one child. Participants represented a variety of organizational levels, with 37.3% being upper-middle managers, 29% first-level managers,

29% top managers/executives, and 4.7% were not managers or did not indicate their level in their organizations. The average age of participants was 44.09 ($SD = 7.88$). In sample 2, 75.9% of participants were Caucasian, 63.3% were men, 78.2% were married, and 64.4% of participants had at least one child. Most participants in this sample were upper-middle managers (44%) or top managers/executives (34.2%), and the mean age was 45.01 ($SD = 7.58$).

5.2. Measures

5.2.1. Boundary management characteristic measures

We developed measures to assess two forms of cross-role interruption behaviors: nonwork interrupting work behaviors and work interrupting nonwork behaviors. As shown in Appendix A, we created eight items for the *nonwork interrupting work behaviors* scale by modifying items from Kossek and Lautsch's (2008) 13-item measure of work–family integration. For example, based on their item “Except in an emergency, I generally try to take care of personal or family needs at work only when I'm on break or during my lunch,” we created the item “I take care of personal or family needs during work” to add clarity. We also created seven items for the *work interrupting nonwork behaviors* scale. Four of these scale items (9, 10, 14, and 15 in Appendix A) are modified versions of Kossek and Lautsch's items. For example, we changed their item from “I almost never bring work home unless it is absolutely critical that I do so” to “I regularly bring work home”. The remaining three items (11, 12, and 13 in Appendix A) were newly created in this study. Participants completed these measures using a rating scale from 1 (strongly disagree) to 5 (strongly agree). The alpha for the nonwork interrupting work behaviors scale was .79 in sample 1 and .74 in sample 2. The alpha for the work interrupting nonwork behaviors scale was .84 in sample 1 and .83 in sample 2.

We wrote four new items to measure *boundary control*. Item development was guided by our construct definition of boundary control (i.e., general perceived control over work–nonwork boundaries) and was influenced by reviewing similar, existing measures such as the psychological job control scale (Kossek et al., 2006). A list of these four items can be found in Appendix A. Participants completed this measure using a rating scale from 1 (strongly disagree) to 5 (strongly agree). The alphas for boundary control were .88 in both samples.

The work and family identity scales were from Kossek et al. (2006), who had adapted items from Lobel and St. Clair (1991). Items for both scales can be found in Appendix A. Participants completed these two-item measures using a rating scale from 1 (strongly disagree) to 5 (strongly agree). The alpha for *work identity* was .76 in sample 1 and .75 in sample 2. The alpha for *family identity* was .85 in sample 1 and .77 in sample 2.

5.2.2. Measures used in validation

Ten well-known measures (see Table 1) were included to establish the convergent, discriminant, and criterion-related validity of the five boundary management characteristic scales. These included work–family conflict, family–work conflict, work–family integration, engagement, work–schedule fit, positive family to work spillover, intention to turnover, psychological distress, time adequacy, and psychological job control. A description of all measures used in the validation as well as the number of items, sample items, and the sources of the measures are presented in Table 1. All measures were completed using a 1 (strongly disagree) to 5 (strongly agree) Likert rating scale with the following exceptions: Work–schedule fit was assessed on a 1 (extremely

Table 1
Description of study measures.

Descriptions of measures	Source	Construct definition	Sample item	# of items
Work–family conflict	Netemeyer et al. (1996)	The extent to which participants' work responsibilities interfered with their family responsibilities.	The amount of time my job takes up makes it difficult to fulfill my family responsibilities.	5
Family–work conflict	Netemeyer et al. (1996)	The extent to which participants' family responsibilities interfered with their work responsibilities.	The demands of my family interfere with work-related activities.	5
Work–family integration	Ilies et al. (2009)	The degree to which participants kept their work and family roles/responsibilities separate from one another.	It is often difficult to tell where my work life ends and my family life begins.	3
Engagement	Britt et al. (2005)	The extent to which they invested themselves in their work.	How well I do in my job matters a great deal to me	6
Work–schedule fit	Barnett and Brennan (1997)	The extent to which one's work arrangement meets the needs of various stakeholders such as a boss or a spouse.	Taking into account your current work hours and schedule, how well is your work arrangement working for you?	6
Positive family to work spillover	Hanson et al. (2006)	The extent to which being happy about family or home-related domains has a positive relationship with being positive at or optimistic about work.	When things are going well in my family, my outlook regarding my job is improved.	4
Intention to turnover	Boroff and Lewin (1997)	The extent to which an individual is likely to leave his or her job.	I am seriously considering quitting this company for an alternate employer.	4
Psychological distress	Kessler et al. (2003)	The extent to which an individual is experiencing psychological distress.	In the past month, how much of the time did you feel so sad that nothing could cheer you up?	6
Time adequacy	Van Horn et al. (2001)	The extent to which an individual feels he or she has enough time to attend to self-care and family needs.	To what extent is there enough time for you to keep in shape?	12
Psychological job control	Kossek et al. (2006)	The extent to which an individual feels he or she has the personal freedom to control when, where, and how to do his or her job.	To what extent do you have control over your work schedule?	9

poorly) to 5 (extremely well) rating scale; psychological distress was assessed on a 1 (never) to 5 (always) rating scale; time adequacy was evaluated using a 1 (not at all adequate) to 5 (almost always adequate) rating scale; and psychological job control was evaluated on a 1 (not at all) to 5 (to a very great extent) rating scale. Alphas for all measures appear in Table 2.

5.3. Data analytic strategy

We established the validity of the boundary management characteristic measures by initially examining the factor structure of their items using confirmatory factor analysis (CFA). We used the first sample to establish a good fitting model and the second sample for replication. In the CFAs conducted on both samples, items were specified to load on their respective factors, and latent variables (but not error terms) were allowed to freely correlate. We relied on several fit indices to judge the fit of our model, including comparative fit index (CFI), root mean square error of approximation (RMSEA), and the standardized root mean square residual (SRMR). “Acceptable” model fit is determined by CFI values greater than .90 and RMSEA values less than .08 (Browne & Cudeck, 1992; Medsker, Williams, & Holahan, 1994). For “good” fit, CFI values should approximate .95, RMSEA values should approximate .06 or less, and SRMR should be less than .08 (Hu & Bentler, 1999). We computed correlations in samples 1 and 2 to explore our measures’ convergent, discriminant, and criterion-related validity. As described in detail in the Results section, we also conducted cluster analyses on the combined samples to identify boundary management profiles and used analyses of variance (ANOVAs) to test for profile differences on relevant work and family outcomes.

6. Results

6.1. Confirmatory factor analysis results

CFA results in sample 1 revealed that the initial 23-item, five-factor model for the boundary management characteristic measures did not provide an adequate fit to the data ($\chi^2 = 673.51$, $df = 220$, $p < .001$; CFI = .83; RMSEA = .08; SRMR = .07). Using modification indices in Mplus (Muthen & Muthen, 1998–2009), we identified six items that had a negative impact on our model’s fit and discarded these items rather than specifying cross-loadings or cross-correlated errors to improve model fit. As shown in Appendix A, this resulted in dropping three items from the nonwork interrupting work behaviors scale, two items from the work interrupting nonwork behaviors scale, and one item from the boundary control measure. The revised 17-item, five-factor model (see Appendix B) provided an improved and acceptable fit to the data ($\chi^2 = 242.04$, $df = 109$, $p < .001$; CFI = .92; RMSEA = .07; SRMR = .05). All factor loadings were statistically significant at the $p < .001$ level, and the average standardized factor loadings for nonwork interrupting work behaviors, work interrupting nonwork behaviors, boundary control, work identity, and family identity were equal to .64, .67, .82, .77, and .83, respectively. The average correlation between the latent factors was .24, suggesting that these factors are related yet distinct constructs.

Table 2
Convergent and discriminant validity correlations.

Boundary management variables	M	SD	1	2	3	4	5	6	7	8	9	10	11
1. Nonwork interrupting work behaviors	3.46	.70	.76										
	3.40	.67	.72										
2. Work interrupting nonwork behaviors	3.20	.84	.04	.80									
	3.21	.83	.17**	.80									
3. Boundary control	3.83	.78	.16**	-.30**	.85								
	3.82	.73	.10	-.16**	.84								
4. Work identity	4.27	.57	-.20**	.30**	-.02	.76							
	4.20	.57	-.16**	.25**	.03	.75							
5. Family identity	3.63	.88	.33**	-.22**	.35**	.09	.85						
	3.48	.79	.24**	-.13*	.29**	-.06	.77						
6. Work–family integration	2.92	.84	.12	.62**	-.42**	.17**	-.27**	.66					
	2.93	.84	.15**	.54**	-.21**	.23**	-.18**	.72					
7. Work–family conflict	2.94	.96	-.17**	.45**	-.52**	.20**	-.39**	.51**	.92				
	3.00	.92	.04	.35**	-.48**	.29**	-.35**	.37**	.91				
8. Family–work conflict	2.09	.72	.15**	.14*	-.21**	-.14*	-.07	.21**	.35**	.85			
	2.14	.75	.16**	.11*	.27**	-.11	-.03	.12*	.40**	.87			
9. Psychological job control	3.31	.72	.19**	-.07	.47**	.09	.27**	-.09	-.43**	-.11	.80		
	3.32	.63	.10	.04	.49**	.06	.22**	.03	-.35**	-.12*	.78		
10. Positive family-to-work spillover	3.99	.70	.12*	.06	.04	.06	.07	.17**	.09	.12	.10	.92	
	4.08	.65	.08	.14*	.03	.15**	.02	.05	.06	.08	.07	.91	
11. Engagement	4.62	.39	-.12*	.18**	.05	.52**	.05	.06	.09	-.15*	.17**	.10	.82
	4.61	.45	.01	.24**	.09	.55**	.06	.11	.14*	-.02	.06	.26**	.85

Sample 1 results are on the first line of every row; sample 2 results are on the second line of every row. Alphas are on the diagonal in bold.

* $p < .05$.

** $p < .01$.

Using sample 2 data, we retested the revised 17-item, five-factor model that emerged from our analyses in sample 1. This model's fit indices closely approximated or exceeded their respective cutoffs ($\chi^2=238.35$, $df=109$, $p<.001$; CFI=.92, RMSEA=.06, SRMR=.06), providing a relatively good fit to the data. All factor loadings were statistically significant at the $p<.001$ level, and the average standardized factor loadings for nonwork interrupting work behaviors, work interrupting nonwork behaviors, boundary control, work identity, and family identity were equal to .58, .67, .80, .78, and .79, respectively. The mean inter-correlation between the latent factors was .19, indicating that the factors are related yet distinct constructs.

In summary, the findings from samples 1 and 2 support the fit of the revised 17-item, five-factor model. We therefore used this factor structure for the boundary management characteristic measures in all subsequent analyses. The final items used in the Work–Life Indicator are in [Appendix B](#). The alphas for these revised scales appear in [Table 2](#).

6.2. Convergent validity

As shown in [Table 2](#), nonwork interrupting work behaviors exhibited positive correlations with family–work conflict ($r=.15$, $p<.05$; $r=.16$, $p<.01$) in both samples and had a positive correlation with work–family integration ($r=.15$, $p<.01$) in sample 2. Although three of these four correlations were statistically significant, they were small in magnitude and thus only partially support [Hypothesis 1a](#). In support of [Hypothesis 1b](#), the work interrupting nonwork behaviors measure was positively correlated with work–family conflict ($r=.45$, $p<.01$; $r=.35$, $p<.01$) and work–family integration ($r=.62$, $p<.01$; $r=.54$, $p<.01$) in samples 1 and 2. In support of [Hypothesis 1c](#), boundary control exhibited positive correlations with psychological job control ($r=.47$, $p<.01$; $r=.49$, $p<.01$) in both samples. Finally, work identity had positive correlations with work engagement ($r=.52$, $p<.01$; $r=.55$, $p<.01$) in samples 1 and 2, providing support for [Hypothesis 1d](#). Overall, these results support our expectations and provide initial evidence of the convergent validity of our measures.

6.3. Discriminant validity

As shown in [Table 2](#), the nonwork interrupting work behaviors measure was weakly related to positive family-to-work spillover ($r=.12$, $p<.05$; $r=.08$, $p>.05$) in samples 1 and 2; these results provide support of [Hypothesis 2a](#). In support of [Hypothesis 2b](#), work interrupting nonwork behaviors had weak positive correlations with positive family-to-work spillover ($r=.06$, $p>.05$; $r=.14$, $p<.05$) in samples 1 and 2. Additionally, supporting [Hypothesis 2c](#), family identity exhibited weak correlations that were not statistically significant with work identity ($r=.09$, $p>.05$; $r=-.06$, $p>.05$) or engagement ($r=.05$, $p>.05$; $r=.06$, $p>.05$) in either sample. These results support our expectations and provide initial evidence of discriminant validity.

6.4. Criterion-related validity

Each of the measures of boundary management was correlated with at least one outcome (see [Table 3](#)). As anticipated, boundary control was the most consistent (and strongest) predictor of the study's outcomes. In both samples, boundary control exhibited negative correlations with both intention to turnover ($r=-.21$, $p<.01$; $r=-.28$, $p<.01$) and psychological distress ($r=-.22$, $p<.01$; $r=-.41$, $p<.01$) and had positive correlations with both time adequacy ($r=.48$, $p<.01$; $r=.45$, $p<.01$) and work–schedule fit ($r=.51$, $p<.01$; $r=.50$, $p<.01$). These results provide support of [Hypothesis 3a](#) and yield criterion-related validity evidence.

Supporting [Hypothesis 3b](#), work to nonwork interruption behaviors were significantly and negatively correlated with work–schedule fit ($r=-.29$, $p<.01$; $r=-.22$, $p<.01$) and time adequacy ($r=-.31$, $p<.01$; $r=-.25$, $p<.01$) and had significant positive correlations with psychological distress ($r=.21$, $p<.01$; $r=.20$, $p<.01$).

6.5. Cluster analysis results

We combined samples 1 and 2 to conduct a cluster analysis to explore how individuals group together based on their responses to the boundary management measures. An exploratory cluster analysis was conducted using SPSS's K-Means

Table 3
Criterion-related validity correlations.

	M	SD	Nonwork interrupting work behaviors	Work interrupting nonwork behaviors	Boundary control	Work identity	Family identity
Intention to turnover	1.93	.83	-.06	.08	-.21**	-.19**	-.18**
	1.89	.84	-.04	.08	-.28**	-.04	-.16**
Psychological distress	2.02	.70	.04	.21**	-.22**	-.02	-.16**
	2.04	.71	.02	.20**	-.41**	-.02	-.25**
Time adequacy	3.31	.85	.20**	-.31**	.48**	-.12	.35**
	3.34	.78	.10	-.25**	.45**	-.18**	.34**
Work–schedule fit	4.03	.83	.26**	-.29**	.51**	-.08	.40**
	4.05	.73	.06	-.22**	.50**	-.07	.32**

Sample 1 results are on the top line of each cell; sample 2 results are on the bottom line of each cell.

* $p<.05$.

** $p<.01$.

clustering (Steinley, 2006). The similarity index used in this analysis was squared to the Euclidean distance, which is the geometric distance in the multidimensional space and the most commonly used distance measures in cluster analysis. K-means clustering (Steinley, 2006) requires that the number of clusters be specified. Because earlier qualitative research with similar variables (see Kossek & Lautsch, 2008) suggested that there would be six clusters of people representing different approaches to boundary management, we examined five, six, and seven-cluster solutions in terms of the means of each cluster on the boundary management measures to assess how distinct the different k clusters were and the degree to which the solution was justified in terms of theory. A six-cluster solution was the most interpretable. We developed the k-clusters by designating cluster scores above cluster means on a dimension as high and those below the mean as low. The mean scores of the six clusters on the measures are provided in Table 4. Cluster names were based on the patterns of boundary management suggested by the average values on the measures and partially derived from categories developed in qualitative research (Kossek & Lautsch, 2008).

6.5.1. Cluster descriptions

Consistent with Hypothesis 4, our findings suggest that boundary management patterns can be described as one of six types (see Table 5). Two of the clusters confirm the two low control profiles suggested by Kossek and Lautsch's (2008) qualitative work: *Job/Work Warriors* (cluster 1), work-centric individuals, with low boundary control, with asymmetrical interruption behaviors (higher work interrupting nonwork but not the reverse); and *Reactors* (cluster 2), dual-centric integrators with low control and high symmetry of cross-role interruption behaviors.

Four clusters are characterized by high boundary control across various identities and interruption behaviors. *Family Guardians* (cluster 3) are family-centric individuals engaging in asymmetrical interruption behaviors (nonwork interrupts work but not the reverse). *Fusion Lovers* (cluster 4) are dual-centric integrators (high interruptions behaviors in both directions). *Dividers* (cluster 5) are dual-centric separators with low cross-role interruptions. *Nonwork-eclectics* (cluster 6) have high identity with other life pursuits than family with high symmetry of cross-role interruptions. A demographic description of all six clusters appears in Table 6.

6.5.2. The relationship of the clusters to work and family outcomes

Analyses of variance (ANOVAs) and post-hoc mean comparison tests were used to determine how the clusters differed in terms of outcomes. Results of all the ANOVAs were statistically significant at the $p < .001$ level. Consistent with Hypothesis 5a, these results indicate that the clusters significantly differed on a variety of outcomes including family–work conflict, work–family conflict, intention to turnover, work–schedule fit, psychological distress, and time adequacy. Post-hoc pairwise Tukey comparisons identified statistically significant differences between clusters. Table 7 provides a summary of the means and standard deviations of each cluster on the outcomes as well as the F-values and eta-squared values. The eta-squared values vary from .05 to .26.

The clusters accounted for a considerable amount of variance with regard to work–family conflict and work–schedule fit, indicating that the clusters are most different from one another with regard to scores on these two variables. There were fewer differences among the clusters with regard to scores on family–work conflict, time adequacy, and intention to turnover, but the differences were still statistically significant. While there are statistically significant differences among the clusters on engagement scores, this was the only outcome variable for which none of the differences was above 0.50. The post-hoc pairwise Tukey comparisons indicated that over 50 differences between clusters were statistically significant ($p < .01$). Because of the large number of differences, not all differences are discussed. The differences mentioned below are statistically significant and have a mean difference above 0.50.

Overall, the results show that consistent with Hypothesis 5b, the low control clusters, *Work Warriors* (cluster 1) and *Overwhelmed Reactors* (cluster 2) tended to score lower on positive outcomes (work–schedule fit, time adequacy) and higher on negative outcomes (family–work conflict, work–family conflict, and psychological distress). The high control clusters of *Dividers* (cluster 5) and *Family Guardians* (cluster 3) tended to score higher on positive outcomes (work–schedule fit, time adequacy) and lower on negative outcomes (family–work, work–family conflict, and psychological distress). Specific results supporting Hypotheses 5a and 5b follow.

Work Warriors (cluster 1) and *Overwhelmed Reactors* (cluster 2) scored higher than the other clusters on work–family conflict. Differences in work–schedule fit scores among clusters demonstrate a similar pattern: *Work Warriors* (cluster 1) and *Overwhelmed Reactors* (cluster 2) scored significantly lower than other clusters, while *Family Guardians* (cluster 3) and *Dividers* (cluster 5) scored significantly higher. *Work Warriors* (cluster 1) and *Overwhelmed Reactors* (cluster 2) were not different from

Table 4
Psychological characteristics of the work–nonwork boundary management profiles.

	Low control profiles		High control profiles			
	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Cluster 6
	Work warriors	Overwhelmed reactors	Family guardians	Fusion lovers	Dividers	Nonwork eclectics
	n = 55	n = 69	n = 126	n = 138	n = 76	n = 128
Nonwork interrupting work behaviors	2.80 (0.75)	3.48 (0.66)	3.74 (0.41)	3.73 (0.52)	2.60 (0.56)	3.52 (0.52)
Work interrupting nonwork behaviors	3.85 (0.77)	3.56 (0.61)	2.40 (0.52)	3.74 (0.46)	2.30 (0.61)	3.51 (0.52)
Boundary control	2.96 (0.86)	2.69 (0.51)	4.08 (0.50)	4.16 (0.50)	4.22 (0.58)	4.00 (0.40)
Work identity	4.66 (0.44)	4.23 (0.51)	3.76 (0.51)	4.46 (0.47)	4.53 (0.46)	4.09 (0.47)
Family identity	1.95 (0.49)	3.70 (0.48)	3.81 (0.43)	4.24(0.46)	3.85 (0.70)	2.96 (0.46)

Note: Means are outside of the parentheses. Standard deviations are inside the parentheses. *** = probability .001 significance level or less.

Table 5

Description of clusters.

Cluster	Name	Profile	Description
1	Work warriors	Low boundary control, work centric, asymmetrical interruption behaviors with high work to nonwork interruptions.	This cluster reports low boundary control ($M = 2.96$). They also have low family identity ($M = 1.95$) ratings and the highest work identity ($M = 4.66$) ratings. This group tends to exhibit relatively low nonwork interrupting work behaviors ($M = 2.80$) but engages more in work interrupting nonwork behaviors ($M = 3.85$). This group uses an asymmetric profile in allowing interruptions—work punctures nonwork time much more than the reverse.
2	Overwhelmed reactors	Low boundary control, dual centric, high interruption behaviors in both directions (nonwork to work and work to nonwork).	This cluster reports the lowest boundary control mean ($M = 2.69$). They are considered dual centric with scores above the mean on both work identity and family identity. They tend to engage in above average work interrupting nonwork ($M = 3.56$) and nonwork interrupting work behaviors ($M = 3.48$). Thus, they integrate in both directions.
3	Family guardians	High boundary control, dual centric, asymmetric interruption behaviors favoring nonwork.	This cluster experiences a high degree of boundary control (4.08). They have fairly equal scores for work identity (3.76) and family identity (3.81); which are both above the mean. They are the group with the highest mean rating of nonwork interrupting work behaviors ($M = 3.74$) and have lower ratings of work interrupting nonwork behaviors ($M = 2.40$), demonstrating an asymmetric pattern of interruption behaviors.
4	Fusion lovers	High boundary control, dual centric, integrator interruption behaviors	Thus, they integrate family with work but separate work from family. This cluster has high boundary control ($M = 4.16$). Although they have the highest mean in terms of family identity ($M = 4.24$), they also identify strongly with work ($M = 4.46$). They have high means in terms of work interrupting nonwork behaviors and nonwork interrupting work behaviors, suggesting that they prefer integration between work and personal life in both directions.
5	Dividers	High boundary control, dual centric, separator interruption behaviors.	This cluster reports a high level of control; they have the highest control score of any of the clusters ($M = 4.22$). They are dual -centric (work identity $M = 4.53$, family identity $M = 3.85$). They have the lowest scores on both work interrupting nonwork behaviors ($M = 2.30$) and nonwork interrupting work behaviors ($M = 2.60$), indicating they separate work and family.
6	Nonwork-eclectics	High boundary control, other-centric, integrator interruption behaviors	This cluster reports a high level of boundary control ($M = 4.00$). Although the respondents in the cluster are more identified with work ($M = 4.09$) than with family ($M = 2.96$), they are relatively low on family identity. They allow work to interrupt nonwork roles ($M = 3.51$) and nonwork to interrupt work ($M = 3.52$), suggesting a moderate level of interrupting behaviors.

Table 6

Demographics of the work–nonwork boundary management profiles.

	Low control profiles		High control profiles			
	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Cluster 6
	Work warriors	Overwhelmed reactors	Family guardians	Fusion lovers	Dividers	Nonwork eclectics
	n = 55	n = 69	n = 126	n = 138	n = 76	n = 128
<i>Age</i>						
(Mean)	43.24	43.39	43.86	45.91	45.55	44.57
(SD)	7.61	7.28	8.34	7.07	7.62	7.91
<i>Gender</i>						
Male	47%	62%	52%	46%	54%	61%
Female	53%	38%	48%	54%	46%	39%
<i>Organizational level</i>						
Top	4%	3%	3%	5%	3%	4%
Executive	38%	29%	18%	33%	29%	29%
Upper middle	40%	45%	39%	41%	40%	42%
First level supervisor	16%	20%	33%	19%	24%	23%
Hourly	2%	0%	6%	2%	1%	2%
<i>Marital status</i>						
Single	11%	6%	7%	4%	9%	6%
Living as married	11%	10%	9%	10%	11%	10%
Married	67%	78%	78%	74%	76%	77%
Divorced	11%	6%	5%	12%	3%	7%
Widowed	0%	0%	2%	0%	1%	0%
Children living at home 3+ days per week	.98	1.33	1.07	1.41	1.10	1.08

Table 7

Means and standard deviations of the clusters on study outcomes.

	Low control profiles		High control profiles				F-value	η^2
	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Cluster 6		
	Work warriors	Overwhelmed reactors	Family guardians	Fusion lovers	W–F dividers	Nonwork eclectics		
	n = 55	n = 69	n = 126	n = 138	n = 76	n = 128		
Family–work conflict	2.19 (0.92)	2.36 (0.86)	2.10 (0.71)	2.12 (0.72)	1.76 (0.53)	2.18 (0.65)	5.54***	0.05
Work–family conflict	3.99 (0.79)	3.51 (0.74)	2.40 (0.76)	2.91 (0.91)	2.52 (0.78)	3.14 (0.80)	41.52***	0.26
Intention to turnover	2.18 (0.89)	2.28 (1.01)	1.90 (0.83)	1.72 (0.75)	1.58 (0.71)	2.00 (0.77)	8.57***	0.07
Work–schedule fit	3.23 (0.82)	3.51 (0.74)	4.33 (0.62)	4.28 (0.65)	4.34 (0.64)	3.95 (0.74)	34.48***	0.23
Psychological distress	2.43 (0.84)	2.38 (0.71)	1.89 (0.61)	1.94 (0.68)	1.71 (0.54)	2.11 (0.69)	13.11***	0.10
Time adequacy	2.54 (0.66)	2.89 (0.77)	3.67 (0.70)	3.48 (0.82)	3.59 (0.69)	3.24 (0.72)	26.33***	0.18
Engagement	4.78 (0.27)	4.58 (0.40)	4.39 (0.50)	4.76 (0.34)	4.69 (0.40)	4.56 (0.41)	14.86***	0.11

Note: Means are on the first row of each cell; standard deviations are in parentheses on the bottom row of each cell. *** = $p < .001$.

each other in terms of psychological distress scores and turnover intentions but both scored higher (suggesting more distress and turnover intentions) than *Dividers* (cluster 5).

Overwhelmed Reactors (cluster 2) also scored significantly higher than *Fusion Lovers* (cluster 4) on intention to turnover. In terms of family–work conflict, *Overwhelmed Reactors* (cluster 2) scored higher than *Dividers* (cluster 5) suggesting that *Overwhelmed Reactors* (cluster 2) experience more family–work conflict than do *Dividers* (cluster 5). *Family Guardians* (cluster 3) tended to score lower on work–family conflict than other clusters.

7. Discussion

This study advances measurement, theory, and practice regarding the growing issue of work–nonwork boundary management. Using a variable-centered approach, we refined and validated theoretically-based measures of boundary management. Then, using a person-centered approach, we identified different clusters of boundary management characteristics and assessed how these clusters differed on important work and nonwork outcomes. Building on prior research, we identified groups of employees with distinct configurations of boundary management characteristics: cross-role interruption behaviors, centrality of work and family identities, and boundary control. We demonstrated that these clusters are differentially linked to work–family outcomes. Overall, we show the promise of integrating carefully validated variable-centered approaches with person-centered approaches to boundary management.

7.1. Measurement contributions

Our first main contribution is identifying new theoretically-based measures of boundary management characteristics that improve both variable- and person-centered research. We refined the content of the boundary management measures by better reflecting work–family theory, workforce developments, and provide evidence of their factor structure. The support of Hypotheses 1, 2, and 3 provides initial evidence of these measures' convergent, discriminant, and criterion-related validities.

Our measures add to theory by suggesting the importance of capturing the *direction* and *symmetry* of cross-role interruption behaviors and providing a more in-depth way of conceptualizing work–family identities. Further, previous research has generally described whether one is an integrator or segmenter without focusing on behaviors or direction of interruptions (cf [Ashforth et al., 2000](#); [Nippert Eng, 1996](#)). Less empirical work has also been conducted on actual individual behaviors in managing the direction of interruptions between roles, and treatments of work–family dual identities. By validating a measure of perceived boundary control, and showing how it is unique from boundary interruption behaviors, we address problems with previous research by not confounding measurement of cross-role boundary behaviors with boundary control. Our measures will enable researchers to look at boundary behaviors and control both holistically in profile analysis and separately with a variable-level analysis. These measures update the ability to capture characteristics of boundary management.

7.2. Boundary management profiles

Our second contribution is the demonstration of the value of moving toward theoretically based person-centered approaches. Person-centered approaches focus on the interactive effects of work–nonwork boundary management characteristics. Future work–family research and practice should take these interrelationships into greater account. People's lives do not necessarily unfold in a variable-centered way. Our results suggest that the constellation of these variables (cross-role behaviors, identities, and control) is differentially clustered and associated with work–family outcomes, providing a more complete understanding of boundary management functioning than examining variables in a piecemeal fashion. Boundary management of work–life relationships involves enactment of an inter-related system of social roles. If researchers only take a variable-level approach, the field overlooks how individuals' work–family systems operate in totality.

Supporting [Hypothesis 4](#), the identification of boundary management clusters supports work–family qualitative work by showing that identity, control, and cross-role behaviors are quantitatively related to create different configurations of work–

nonwork boundary management styles. Our cluster results partially replicate the qualitative study of Kossek and Lautsch (2008) who found three main profiles distinguished by whether they were integrators, separators, or volleyers (alternating style), each linked to a positive or negative outcome subtype.

The current study did not replicate the volleying style most likely because it was cross-sectional so it was difficult to capture switching between integration and separation at one time period. This research did, however, find that taking symmetry in the direction of cross-role interruption behaviors and identity centrality into account reveals many varied types of integrators (some symmetrical such as Fusion lovers, Reactors, and Nonwork Eclectics), and some partial integrators who are asymmetrical (Work Warriors and Family Guardians), suggesting that there are many ways to enact integration. Our study includes more variety in different types of work–nonwork configurations than previous research such as Eclectics (neither work nor family centric individuals) and dual-centric employees.

7.3. Boundary profiles and outcomes: control matters

Our third overall contribution is our finding that the profiles differentially relate to positive and negative work–family outcomes. We identified low control profiles (Reactors and Work warriors) that generally had more negative work–family outcomes than high control profiles. Results showed that what matters more for positive work–family outcomes than the mere act of integrating or separating is whether one feels in control of boundaries and is able to engage in the amount of symmetry in interruption behaviors that fit with identities of higher salience.

7.4. Future research

Future research should build on the person-centered approach using the validated measures to examine variation in boundary management enactment over time. Future research should assess the psychological stability of these profiles as individuals' lives shift over different life cycle stages of family and career. More research is needed on the interrelationships between control, identity, and interruption behaviors in boundary management. Future research should confirm our profiles' results suggesting that people with unicentric identities and high control are more likely to have asymmetrical interruptions consistent with their identity centrality and dual-centric individuals are more likely to have interruptions in both directions. Research is also needed in examining demographic and psychological linkages to the profiles and how they vary across gender, race, age, occupation, national and organizational cultures, personality, family background, and use of wireless technology. Regarding future cross-cultural research, it may be that cultures that have higher power distance may have a higher proportion of separators than cultures where personal life and work are more intertwined socially. Future studies on symmetry in boundary interruptions might examine "How does full or partial puncturing of roles link to boundary control and identities and work–family outcomes?" Other possible questions are, "What leads some individuals, cultures, and professions to have asymmetry in interruption behaviors while others are more symmetrical?" Asymmetry of interruption behaviors could be to some degree a function of job or family characteristics and research should carefully assess resources and demands in these domains to link them to boundary management.

We only measured employee perceptions of work and family outcomes, and future research might measure crossover effects of boundary management on the outcomes of family members and work members. New outcomes such as biodata on health, sleep, mood, and well-being could be measured and linked to profiles. Multi-level models could also be developed to relate individual boundary management approaches to the work and family units, organizational systems, and national cultures in which they are nested. Symmetry and asymmetry in boundary management approaches at dyadic supervisor, coworker, family member, work group or organizational levels should be assessed.

Future research could synthesize the configurational approach suggested here and collect longitudinal data on profile changes over the life course. Experience sampling methods such as time diaries might be used to examine how the profiles vary in daily work–family episodic experiences for individuals, family members, and coworkers. Research should also examine if there are unique pathways between different profiles and work–family outcomes, which is important for both research and interventions.

Given the importance of boundary control, additional research is needed on the influences of different types of control (e.g., boundary control for different roles, schedule control, and job control) as a driver of outcomes associated with profiles. It is important to conduct studies on the cumulative effects of control or lack of control over time on key outcomes such as psychological distress to more precisely establish the nature of these relationships. It would be especially important to assess the impact of different configurations on family outcomes, such as family distress, as well as other key work measures such as leader's performance and career derailment.

7.5. Implications for practice

A person-centered approach has many implications for practice. The link between the profiles and the outcome variables suggests the potential utility of developing distinct intervention strategies tailored to different groups. For example, the Overwhelmed Reactors (cluster 2) might need interventions that would increase a sense of control. They might benefit from greater family and supervisory support and access to different types of work–family policies than Dividers. Dividers, in contrast, need the ability to leave work at work and home at home. The person-centered approach argues for organizations to better prepare and support managers and workers and support work–family policies to respect the growing diversity in boundary management profiles. Our study suggests that organizations need to offer not only formal workplace flexibility (e.g., telework, flextime) but also more importantly perceived boundary control. Workplace flexibility without boundary control may not necessarily be helpful to

dual, family, and other centric people. Future practice could examine if it is harmful if one uses available workplace flexibility options (e.g., telecommuting), but does not experience a sense of control from policy use, and experiences negative outcomes.

The boundary characteristic measures could be useful in promoting self-awareness. Assessments such as the WorkLife Indicator can be developed and fed back to individuals, managers, subordinates, work teams, and families to help people understand whether they are enacting boundaries to help them feel more or less in control. Individuals need to learn how to better communicate their preferred boundary management approach to managers, clients, coworkers, and families in order to better set and manage expectations and to identify solutions.

7.6. Study limitations

While this study is based on hundreds of managers and professionals, our findings are derived from individuals who work mostly for large multinational corporations and are located in the United States. Our research should be replicated with non-U.S. samples to provide a broader perspective. Data should also be gathered from more types of organizations (such as family firms and small companies), different occupations (such as entrepreneurs, and manufacturing workers), and organizational levels (hourly workers and first line supervisors).

Because our data are cross-sectional, we cannot establish evidence of a causal relationship between boundary measures and outcomes; we can only report a relationship between these variables. Our measures were based on self-ratings, and as argued, it would be useful to have data from multiple perspectives (e.g. boss, spouse, and children) and from other sources (e.g. performance metrics). Nevertheless, personal assessments are important. Scholars may assume that the use of self-ratings automatically implies that observed relations among variables are upwardly biased. However, as Conway and Lance (2010) argued, this is not necessarily true. Conway and Lance noted that it is acceptable to use self-ratings when four specific conditions are met. First, authors should provide a rationale for why self-ratings are most appropriate to use. In our case, self-ratings were the logical choice because our sample respondents had to answer questions about many private constructs (e.g., intention to leave, psychological distress, and perceived boundary control) that other individuals could not accurately rate. Second, it is acceptable to use self-ratings if the measures used have construct validity. In our study, we rigorously validated new measures of boundary management and used existing measures from the published literature that had already undergone reliability and validity testing. Third, self-ratings are acceptable to use as long as there is no substantial overlap in item content between measures. As shown in Table 1 and the appendices, most of our measures had only low to moderate overlap in terms of item content. Even when correlating our boundary management measures with measures of theoretically similar constructs, the relationships (or correlations) were only moderate in magnitude. Finally, consistent with Conway and Lance's recommendations, we took precautions during data collection to proactively deal with common method bias. Most notably, we promised our sample respondents anonymity to reduce social desirability when responding and used multiple samples.

7.7. Conclusion

In sum, this study shows that theory and practice benefit from examining boundary management using both variable-centered and person-centered approaches. It is important to move beyond a simple distinction between integrators and segmenters. People differ not only in terms of their cross-role interruption behaviors but also in terms of the symmetry and direction of allowed interruptions, the psychological centrality of different role identities, and perceived psychological control over boundaries. Organizations need to take actions to actively manage cultures to not stigmatize people who need to enact boundaries in different ways as their work–life demands rise. This may ultimately enhance organizational effectiveness at the same time as improving the lives of individuals, families, and society.

Appendix A. Boundary management scales developed for the present study

Note that the items with asterisks were included in the final 17-item, five-factor model. All other items were dropped based on the study's CFA results.

Nonwork interrupting work behaviors

1. I take care of personal or family needs during work.*
2. I respond to personal communications (e.g., emails, texts, and phone calls) during work.*
3. I do not think about my family, friends, or personal interests while working so I can focus.*
4. When I work from home, I handle personal or family responsibilities during work.*
5. I monitor personal-related communications (e.g., emails, texts, and phone calls) when I am working.*
6. I attend to family or personal issues during work.
7. When I work from home, I work in a space designated for that purpose only.
8. When I work from home, it is okay if my family or friends interrupt me.

Work interrupting nonwork behaviors

9. I regularly bring work home.*
10. I respond to work-related communications (e.g., emails, texts, and phone calls) during my personal time away from work.*
11. I work during my vacations.*

12. I allow work to interrupt me when I spend time with my family or friends.*
 13. I usually bring work materials with me when I attend personal or family activities.*
 14. When I'm at home, I rarely think about work, so I can fully get away from my job.
 15. I monitor work-related communications (e.g., emails, texts, and phone calls) during my personal time away from work.

Boundary control

16. I control whether I am able to keep my work and personal life separate.*
 17. I control whether I have clear boundaries between my work and personal life.*
 18. I control whether I combine my work and personal life activities throughout the day.*
 19. I decide whether I blend my work and personal activities throughout the day.

Work identity

20. People see me as highly focused on my work.*
 21. I invest a large part of myself in my work.*

Family identity

22. People see me as highly focused on my family.*
 23. I invest a large part of myself in my family life.*

Appendix B. Final items for the Work–Life indicator

Administer these items using the 1 (strongly disagree) to 5 (strongly agree) rating scale provided below. Please also note that item three of the “Nonwork Interrupting Work Behaviors” scale needs to be reverse scored.

Nonwork interrupting work behaviors					
1. I take care of personal or family needs during work.	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
2. I respond to personal communications (e.g., emails, texts, and phone calls) during work.	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
3. I do not think about my family, friends, or personal interests while working so I can focus.	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
4. When I work from home, I handle personal or family responsibilities during work.	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
5. I monitor personal-related communications (e.g., emails, texts, and phone calls) when I am working.	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Work interrupting nonwork behaviors					
6. I regularly bring work home.	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
7. I respond to work-related communications (e.g., emails, texts, and phone calls) during my personal time away from work.	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
8. I work during my vacations.	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
9. I allow work to interrupt me when I spend time with my family or friends.	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
10. I usually bring work materials with me when I attend personal or family activities.	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Boundary control					
11. I control whether I am able to keep my work and personal life separate.	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
12. I control whether I have clear boundaries between my work and personal life.	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
13. I control whether I combine my work and personal life activities throughout the day.	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Work identity					
14. People see me as highly focused on my work.	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
15. I invest a large part of myself in my work.	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Family identity					
16. People see me as highly focused on my family.	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
17. I invest a large part of myself in my family life.	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

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