

# When does work-family conflict occur?

Kimberly A. French<sup>a,\*</sup>, Tammy D. Allen<sup>b</sup>, Kate E. Kidwell<sup>a</sup>

<sup>a</sup> School of Psychology, Georgia Institute of Technology, 654 Cherry St. NW, Atlanta, GA 30313, United States of America

<sup>b</sup> Department of Psychology, University of South Florida, 4202 E Fowler Ave., PCD 4118G, Tampa, FL, 33620, United States of America

## ARTICLE INFO

### Keywords:

Work-family conflict  
Time  
Transitions  
Boundary  
Permeability  
Flexibility

## ABSTRACT

The present research examines diurnal patterns of work-family conflict episodes in a sample of 106 working adults collected every two hours over three days. Using boundary theory, we explore the timing of work-family conflict throughout the day and examine daily and weekly transitions as predictors of work-family conflict occurrence. We contrast two theoretical perspectives which suggest that transitions are a point for potential spillover and regulation failure (Ashforth et al., 2000), and that transitions necessarily shift resources, creating conflict attributions (Matthews et al., 2014). Results show work-family conflict occurs at all times of the day, and that family-to-work conflict has a distinct diurnal pattern. The timing of work-family conflict can be predicted by temporal and spatial transitions, the start and end of scheduled work times, and standard evening transition times. Both spillover and attributional perspectives were supported for self-reported transitions, but only spillover rationale was supported for scheduled transitions. Follow-up analyses suggest temporal transitions and rapid transitions are particularly strong correlates of work-family conflict episodes. In addition, role flexibility and permeability did not modify the relationship between transition occurrence and work-family conflict occurrence. This study yields novel theoretical and practical insight into the timing of work-family conflict episodes, and rigorously tests boundary theory.

## 1. Introduction

Many physiological and psychological human experiences follow cyclical daily patterns (e.g., Beal & Ghandour, 2011; Hülshager, 2016; Zijlstra & Rook, 2008). Diurnal patterns are driven by in part by external cues and behaviors, such as sleep and work schedules (Hülshager, 2016; Zijlstra & Rook, 2008). Understanding diurnal patterns is critical for building theoretical understanding of how and when processes unfold, establishing temporal precedence needed for causal inferences, designing studies to capture psychological phenomena, and designing interventions that target adverse events (Morgeson et al., 2015; Shipp & Cole, 2015).

Despite the importance of timing, occupational science, and in particular work-family research, has given cursory attention to time (Allen et al., 2019; Hülshager, 2016; Shipp & Cole, 2015). This is surprising given that managing work and family is thought to follow a rhythmic quality as individuals juggle role responsibilities throughout the day (e.g., Shockley, Clark, Dodd, & King, 2021). These rhythms shape implicit theoretical assumptions that work-family conflict occurs at certain times of the day. For example, work is thought to interfere with family in the evening and on weekends, while family interference with work ostensibly occurs during working hours (e.g., Matthews et al., 2010; Nohe et al., 2014). Assumptions about timing also tend to conflate work-family conflict and transition, such that in order to experience a work-family conflict, one must transition from the current domain to an alternate

\* Corresponding author.

E-mail address: [kfrench0429@gmail.com](mailto:kfrench0429@gmail.com) (K.A. French).

domain. Consequently, it might be considered impossible to experience work-to-family conflict during working hours, because one is already engaged in the work role.

These assumptions drive rationale, hypotheses, and study design decisions, but remain untested (Allen et al., 2019; e.g., Matthews et al., 2014). For example, studies often only assess work-to-family conflict or family-to-work conflict at a single time point during the day (Allen et al., 2019; e.g., Wagner et al., 2014). Further, work-family transition items like “How often have you done work on the weekend to meet work responsibilities?” assume that weekends are time dedicated to family in which individuals might transition from family-to-work, but not work-to-family (Matthews et al., 2010, 2014). This sample item also conflates transitioning with work-family conflict, as work is interrupting family time, further implying work-to-family (but not family-to-work) conflict occurs on the weekends.

This study aims to test implicit timing assumptions by examining when work-family conflict occurs. First, we identify patterns in work-family conflict occurrence within and across days. Second, we examine whether work-family conflict occurrence is tied to the daily and weekly rhythms of transitioning between work and family roles. Based on boundary theory (Ashforth et al., 2000; Clark, 2000), we posit that transitions between work and family roles delineate specific times during which work-family conflict episodes are likely to occur within a given day and week. We examine self-reported transitions, scheduled transitions, and societal standard transition times to determine the degree to which work-family conflict is tied to impromptu, scheduled, and standard societal work and family rhythms.

This study extends the existing work-family literature by examining the ebb and flow of work-family conflict throughout the day. In doing so we advance work-family theory in several ways. First, we bring a temporal focus to understanding work-family conflict experiences. Specifically, we challenge popular notions regarding timing and provide unique and novel empirical data that can be used in further theoretical development concerning relationships between work-family conflict and other time-varying states. This is critical as researchers continue to bemoan our lack of understanding of “when things happen” within the psychological sciences (Hopwood et al., 2021). Moreover, we harmonize our temporal perspective with that of boundary theory (Ashforth et al., 2000), positioning transitions as time points during the day that structure predictable daily work-family conflict experiences. Our episodic approach based on multiple daily assessments offers a precise connection between theory and method. This enables us to add empirical nuance to boundary theory and transitions research by examining specific types of transitions that occur, including self-reported spatial and temporal transitions, scheduled transition times, and standard transition times. Finally, we add theoretical clarity to the question of why and when transitions are associated with work-family conflict by contrasting two distinct perspectives (Ashforth et al., 2000; Matthews et al., 2014).

### 1.1. Defining work-family conflict episodes

Work-family conflict occurs when the demands of work/family make it difficult to meet demands within the alternate role (Greenhaus & Beutell, 1985). There are two distinct directions: work interferes with the ability to meet family demands (WIF) or family interferes with the ability to meet work demands (FIW). When a work-family conflict arises, the direction of the conflict is determined when individuals choose to prioritize their time, attention, or thoughts toward one role at the expense of the other (Greenhaus & Beutell, 1985; Shockley & Allen, 2015). These directions are conceptually and empirically distinct (Frone et al., 1997).

Most work-family conflict research employs a levels approach, which assesses general perceptions of the extent that individuals experience work-family conflict, typically using Likert-type agreement or frequency scales (Maertz & Boyar, 2011). We take an episodic approach to measuring work-family conflict. The episodic approach captures discrete work-family conflict events (Maertz & Boyar, 2011; see for example Shockley & Allen, 2015). Follow-up questions may also be used to gain an in-depth understanding of the event itself, such as when the event occurred, event intensity, or how individuals reacted to the event (Shockley & Allen, 2015). By measuring discrete occurrences, the episodic approach disentangles work-family conflict itself from features (e.g., recency, intensity, frequency) (Morgeson et al., 2015). These features likely affect levels-based perceptions, but are less discernible using the levels-based approach. Episodes are theoretically tied to levels-based measures, such that episodic experiences in everyday life shape general perceptions of the work-family interface, like work-family conflict or work-family balance (Maertz & Boyar, 2011; Morgeson et al., 2015). An episodic approach in combination with an experience sampling design shifts focus to the source of work-family conflict levels (i.e., episodes) and captures the phenomenon of work-family conflict closer to the lived experience. We focus on both directions of episodic work-family conflict: WIF episodes (EWIF) and FIW episodes (EFIW).

### 1.2. Daily timing of work-family conflict

Several empirical findings suggest EWIF and EFIW may follow distinct daily patterns. Variation and mean levels found in daily diary studies suggests WIF and FIW are common daily experiences (Allen et al., 2019; McCormick et al., 2020; Podsakoff et al., 2019). Further, work-family conflict covaries with other daily patterned states such as mood and fatigue (Amstad et al., 2011; Chi et al., 2018; Ilies et al., 2015). Meta-analyses show WIF and FIW are distinct with unique work and family antecedents, respectively (Allen et al., 2020; Michel et al., 2011). Thus, within day, work and family role engagement may differentially predict EWIF and EFIW occurrence. Daily studies typically assess one work-family conflict direction or the other, depending on whether researchers are interested in experiences during the day at work (focus on FIW) or in the evening (focus on WIF; Allen et al., 2019; Wagner et al., 2014). These design choices are driven in part by the assumption that WIF/FIW occurs within specific roles that are occupied at certain times of the day. To further understanding of the dynamic daily features of EWIF/EFIW, our first aim is to test this assumption and explore the potentially distinct patterns of EWIF/EFIW occurrence throughout the day.

**Research Question 1.** : Are there distinct patterns in the likelihood of EWIF and EFIW occurrence over the course of the weekday?

### 1.3. Predicting work-family conflict episode occurrence

The day can be broken up into times based on work and family role involvement (Zijlstra & Rook, 2008). We focus on the act of transitioning between these two roles, as an environmental cue that structures EWIF/EFIW diurnal patterns. Boundary theory suggests transitions may differ in the type of boundary crossed (i.e., temporal or spatial), whether or not transitions are planned, and the time of day a boundary is crossed (Hall & Richter, 1988). Additionally, individuals may transition from work to family (work-to-family transitions), and from family to work (family-to-work transitions) (Ashforth et al., 2000; Matthews et al., 2010; see Table 1).

There are two competing perspectives that explain why transitions are associated with work-family conflict. Boundary theory suggests the process of transitioning between roles is taxing, as it requires physical and psychological disengagement from the exited role, and the initiation of physical and psychological engagement in the entered role (Ashforth et al., 2000; Hall & Richter, 1988; see also Clark, 2000; Sonnentag & Kühnel, 2016). Individuals regulate their time and attention by shutting off thoughts, feelings, and behaviors from one role in an effort to engage in those appropriate for the alternative role (Ashforth et al., 2000; Smit et al., 2016). Failure to do so results in potential for work-family conflict due to (mis)allocation of resources to the previous role (Ashforth et al., 2000; Greenhaus & Beutell, 1985; Sonnentag & Kühnel, 2016). For example, when starting the workday, lingering thoughts from family chores that morning might bleed into the work domain, creating an EFIW. When transitioning from work-to-family, individuals may have difficulty switching into family mode, prompting decisions and thoughts that favor work over family (EWIF). Similarly, transitions from family-to-work are likely to instigate EFIW.

Matthews et al.'s (2010, 2014) work on transition frequency offers a different perspective from that of boundary theory. Specifically, they theorize that transitions require shifting of time and attentional resources across roles and that it is the shifting of resources that engenders feelings of conflict, because one role is prioritized over another. By virtue of shifting resources from one domain to another, the entered role receiving resources is perceived as interfering with the exited role (Matthews et al., 2010, 2014). For example, if shifting time away from family to engage in work, individuals might perceive they are experiencing EWIF. In contrast with boundary theory, this rationale implies that transitioning from work-to-family is likely to incur EFIW, because family is prioritized above work (and vice versa).

Empirical research on transitioning and work-family conflict exclusively focuses on person-level transition frequencies in relation to work-family conflict levels. This research shows individuals who transition more frequently tend to more strongly endorse work-family conflict (see also Allen et al., 2014; Glavin & Schieman, 2010, 2012; Kossek et al., 2012; Matthews et al., 2010, 2014; see Desrochers et al., 2005 for one exception). However, these measures of transitioning and work-family conflict are conflated (Allen et al., 2014), and thus it remains unclear whether and why work-family conflict occurs during periods of transition.

Consistent with both theoretical perspectives outlined above, we posit EWIF/EFIW are associated with spatial and temporal transitions within-person. Support for boundary theory and shifting time and attention mechanisms would be indicated by a relationship between EWIF/EFIW and transitions in the same direction (work-to-family/family-to-work). Support for Matthews et al.'s (2010, 2014) resource allocation mechanism would be indicated by a relationship between EWIF/EFIW and transitions in the opposing direction (family-to-work/work-to-family). We also expand previous boundary theory tests by testing several different time-bound transition operationalizations: 1) temporal transitions and spatial transitions, 2) planned transition times that mark the start and end of the work day, and 3) standard transition times (8 AM, 6 PM) and days (Monday, Friday) that define traditional daily and weekly working hours. Table 1 outlines each type of transition.

### 1.4. Temporal and spatial transitions

Transitions are framed in terms of temporal, spatial, or psychological boundaries associated with a role (Allen et al., 2014; Ashforth

**Table 1**  
Detailed comparison of transitions examined in the present study.

Transition name	Definition	Transition type	Measurement	Level of measurement
Temporal	Work-to-family or family-to-work change in task	Self-reported	Two yes/no items on each within-day survey	Within-day
Spatial	Work-to-family or family-to-work change in location	Self-reported	Two yes/no items on each within-day survey	Within-day
Start of work	Time window during which participants are scheduled to begin work for a given day	Scheduled	Coded based on work schedule reported on baseline	Within-day
End of work	Time window during which participants are scheduled to end work for a given day	Scheduled	Coded based on work schedule reported on baseline	Within-day
Eight AM	Traditional start of work time for the U.S.	Standard	Coded based on survey signal time (8 AM = 1, else = 0)	Within-day
Six PM	Traditional daily end of work time for the U.S.	Standard	Coded based on survey signal time (6 PM = 1, else = 0)	Within-day
Monday	Traditional start of work week day for the U.S.	Standard	Coded based on response day of the week (Monday = 1, else = 0)	Day
Friday	Traditional end of work week day for the U.S.	Standard	Coded based on response day of the week (Friday = 1, else = 0)	Day

et al., 2000; Clark, 2000; Greenhaus, 1988; Hall & Richter, 1988). For example, shifting from time spent on tasks at home to paid work tasks constitutes a temporal boundary crossing. A role transition might also occur when individuals move from their home to their work location, thereby crossing spatial work-home boundaries. Finally, psychological boundaries are delineated by thoughts or emotions that are appropriate for one role, but not for another (Clark, 2000; Hall & Richter, 1988). Transitions are distinct from EWIF/EFIW, in that it is plausible for individuals to transition without a work-family conflict arising. It is also possible for an EWIF/EFIW to arise, but for the individual to maintain role engagement and therefore not transition. In the current study, we focused on spatial and temporal transitions. Relative to psychological transitions, temporal and spatial transitions are simpler to report, which is important given the current study's intensive experience sampling design. Further, temporal transitions imply a type of psychological shift in cognition, such that individuals must change their thinking and attention from work/family activities to activities in the alternative role. Thus, psychological transitions in cognition are somewhat implied with temporal transitions.

**Hypothesis 1a.** EWIF/EFIW is more likely to occur during time windows in which participants spatially transition relative to time windows in which participants do not spatially transition across work and family domains.

**Hypothesis 1b.** EWIF/EFIW is more likely to occur during time windows in which participants temporally transition relative to time windows in which participants do not temporally transition across work and family domains.

### 1.5. Scheduled daily transition times

Hall and Richter (1988) discussed “planned” transitions that occur when individuals move to and from work at the start and end of the work day, contrasting them with unplanned “interposed” transitions. Start and end of day transitions are similarly discussed in the recovery literature as points in time when individuals must detach from one domain and re-attach to another (Sonnentag et al., 2020; Sonnentag & Kühnel, 2016). Thus, planned start and end of day transition times likely require multiple types of boundary crossing (i.e., temporal and spatial). We define scheduled start of work and end of work transition times as times workers have scheduled in advance to begin/end work within a given day. We predict scheduled transition times at the start and end of the day are associated with increased likelihood of EWIF/EFIW within-person.

**Hypothesis 2a.** EWIF/EFIW is more likely to occur during time windows in which participants have scheduled start of work transitions relative to other time windows.

**Hypothesis 2b.** EWIF/EFIW is more likely to occur during time windows in which participants have scheduled end of work transitions relative to other time windows.

### 1.6. Standard daily transition times

In modern U.S. society, individuals traditionally work during the week (Monday-Friday) and during the day, approximately between the hours of 9 AM and 6 PM (U.S. Department of Labor, 2019). Such hours are often labeled “standard” working hours and used as the reference point for other types of work scheduling (e.g., shift work; Presser, 2003). Family responsibilities are taken care of primarily in the evenings on weekdays and on the weekends (Saturday, Sunday). Standard scheduling implies that workers' transitions to and from work likely occur in the morning and in the evening on weekdays (Hall & Richter, 1988). Even if a worker him/herself is not transitioning at standard times, it may be that his/her family is transitioning (e.g., a spouse leaving for work, a child leaving for school in the morning). Thus, mornings (around 8 AM) and early evenings (around 6 PM) are likely to be key times in which EFIW and EWIF occurs within-person.

**Hypothesis 3a.** EWIF/FIW is more likely to be reported at the 8 AM time window relative to other time windows.

**Hypothesis 3b.** EWIF/FIW is more likely to be reported at the 6 PM time window relative to other time windows.

### 1.7. Standard weekly transition days

Additionally, weekly transitions are made on Mondays and Fridays as workers approach large blocks of work and family time. In support, research indicates major physical and cognitive transitions to/from work and family are points in which workers often experience spillover and conflict between work and family roles (Campos et al., 2009; Hall & Richter, 1988). Recent recovery research also shows patterns of vigor and fatigue vary by weekday, with energy increasing on Fridays in anticipation of the weekend and decreasing at the beginning of the week on Mondays (Weigelt et al., 2021). We therefore predict EWIF/EFIW occurrence is associated with beginning (Monday) and end (Friday) of the week transition days within-person.

**Hypothesis 4a.** EFIW is more likely to occur on Monday relative to other days of the week.

**Hypothesis 4b.** EWIF is more likely to occur on Friday relative to other days of the week.

## 2. Method

### 2.1. Participants

Participants were 106 full-time workers in the Southeast United States recruited through community fliers, emails, online postings, and word of mouth (see power analysis in the supplemental file). We received 192 inquiries. To be eligible, participants were required to be 1) 18 or older, 2) work 30 or more hours per week with at least 30 work hours between 7 AM and 7 PM, Monday-Friday at a paid job (full time, standard hour employment), 3) have a spouse/cohabiting partner of at least one year and/or a dependent child living at home or caring for a dependent elder, and 4) own a smart phone that could receive texts.

Participants were predominantly female (64%), 33.06 years old on average ( $SD = 8.96$ ), and racially diverse with White (51%), followed by Hispanic or Latin (20%), Black or African American (16%), other (8%), Asian (4%), and American Indian or Alaskan Native (1%). Participants worked an average of 41 h each week ( $SD = 7.23$ ), with an average job tenure of 3.40 years ( $SD = 4.06$ ). Average household income was \$61,841 ( $SD = \$58,799$ ). Most participants had a bachelor's degree (29%), followed by some college (27%), or a master's degree (26%). Participants were from a wide range of industries; the top five included educational services (23%), professional, scientific, and technical services (17%), retail (10%), healthcare (10%), and information (8%). Job titles varied widely, including pharmacy tech, grants administrator, HR coordinator, sales engineer, and professor.<sup>1</sup> Participants were primarily married (47%), 36% were in a committed relationship or domestic partnership, 7% were divorced, and 10% were single. About half of participants had children (52%) (number of children ranged from 0 to 5 (Mean = 0.87)).

### 2.2. Procedure

Participants met with a researcher for a one-hour training session, which included informed consent, completing baseline measures, and training on study procedures. Participants were provided with multiple examples of EWIF/EFIW and asked to provide their own examples to confirm they understood what constituted an EWIF/EFIW. The second phase was an experience sampling (ESM) data collection. Participants began reporting data the Monday ( $n = 56$ ) or Wednesday ( $n = 50$ , randomly assigned) that followed in-lab training. Randomized start days allowed us to assess beginning and end of week transitions while minimizing fatigue and potential systematic bias in our data due to day of the week. Participants completed eight surveys each day (8 AM, 10 AM, 12 PM, 2 PM, 4 PM, 6 PM, 8 PM, and 10 PM) for three days.<sup>2</sup> Mobile-friendly surveys were sent to the participant's smartphone using an online text messaging service. Surveys were timed to create equal, short sampling intervals in order to capture acute fluctuations in EWIF/EFIW during periods the participants were awake. Short intervals also enabled responses to occur as close as possible to an EWIF/EFIW without causing undue burden. Participants received up to \$75 compensation via emailed Amazon Gift Cards, as well as a personalized report of data tracked throughout the study.

### 2.3. Measures

#### 2.3.1. Baseline measures

**2.3.1.1. Demographics.** Participants reported their gender, age, ethnicity/race, and education level. Participants also reported their job title, industry, job tenure, average work hours per week, and household income. For family-related demographics, participants reported their marital status, parental status, and children's ages.

**2.3.1.2. Scheduled daily transition times.** Participants reported their work start and end times for each day of the week during the upcoming study week. For *scheduled start of work transitions*, the daily time point during the participant's reported work start time was coded as "1," indicating a morning scheduled transition between work and family; all other time points were coded as "0." For example, if a participant reported a scheduled work start time of 8 AM on Monday, we coded their 8 AM Monday signal response as "1" and all other values as "0." Similarly, for *scheduled end of work transitions*, the daily time point following the participant's reported work end time was coded as "1," indicating an afternoon scheduled transition between work and family; all other time points were coded as "0." For example, if a participant reported a scheduled work end time of 7 PM on Monday, we coded their 8 PM Monday signal response as "1" and all other values as "0."

#### 2.3.2. Daily measures

**2.3.2.1. Temporal and spatial transitions.** Four single items assessed whether participants transitioned between work and family roles. First, *work-to-family temporal transitions* were assessed with the following item: "In the last two hours, have you switched from engaging

<sup>1</sup> Please see our supplemental online file for a full list of industries and job titles.

<sup>2</sup> The number of responses on each day were as follows: Monday time point  $n = 439$  and day level  $n = 56$ , Tuesday time point  $n = 429$  and day level  $n = 56$ , Wednesday time point  $n = 783$  and day level  $n = 105$ , Thursday time point  $n = 360$  and day level  $n = 50$ , and Friday time point  $n = 350$  and day level  $n = 50$ . There were no significant differences in response rates by day of the week ( $\chi^2(28) = 34.72, p = .18$ ) or day of participation ( $\chi^2(14) = 21.00, p = .10$ ).



in work responsibilities to engaging in family responsibilities?" A parallel item that exchanged work and family terms assessed *family to work temporal transitions*. *Work-to-family spatial transitions* were assessed with the following item: "In the last two hours, have you moved from a work location/space to a family location/space?" A parallel item that exchanged work and family terms assessed *family to work spatial transitions*. For each item, responses were coded 1 = yes, or 0 = no.

**2.3.2.2. Standard daily transition times.** Eight time points were dummy coded into a variable for 8 AM transition time and 6 PM transition time. For the 8 AM transition time, the 8 AM signal was coded as "1," indicating a beginning of day transition time between work and family; all other time points were coded as "0." For the 6 PM transition time, the 6 PM signal was coded as "1," indicating an end of day transition between work and family; all other time points were coded as "0."

**2.3.2.3. Standard weekly transition days.** Days were coded into two variables: *beginning of week transition* or an *end of week transition*. For beginning of week scheduled transition, Mondays were coded as "1," indicating a beginning of week scheduled transition between work and family; all other days were coded as "0." For end of week scheduled transition, Fridays were coded as "1," indicating a beginning of week scheduled transition between work and family; all other days were coded as "0."

**2.3.2.4. Work-Family Conflict Episodes.** The number of EWIF/EFIWs within the last two hours was reported using an 18-item checklist (9 items for EWIF, 9 items for EFIW, including an "other" option for both). We dichotomized our measure to indicate *EWIF/EFIW occurrence* (0 = No EWIF/EFIW, 1 = one or more EWIF/EFIW occurred. See the supplemental file for items and measure development information.

## 2.4. Analysis

The research question and hypotheses were tested via multi-level (mixed) regressions in R using the 'multilevel' package (Bliese, 2016) or the 'lme4' package when analyzing binary outcomes (Bates et al., 2015). Our approach allows estimation of relationships while accounting for the nested nature of the data (Raudenbush & Bryk, 2002). Analytical procedures were guided by the 'multilevel' and 'lme4' package user guides (Bates et al., 2015; Bliese, 2016) and published guidelines (Bliese & Lang, 2016). For all models, we estimated three levels: time points (level 1) within days (level 2) within persons (level 3).<sup>3</sup> All models included random intercepts and fixed slopes. Each predictor was tested in a separate model to examine that predictor's relationships with EWIF/EFIW occurrence, unconfounded by other predictors.

## 3. Results

### 3.1. Preliminary analyses

SPSS was used for data cleaning, assumption checking, and descriptive statistics (see Table 2 and Table 3 for within and between-persons correlations, means, and standard deviations). To be counted as a valid response, participants had to log in to the survey within two hours and five minutes of receiving a text message. The final data set included 2361 responses. Participants completed an average of 22.91 responses (minimum = 4, 62.0% perfect compliance, 91.6% 22 or more responses),<sup>4</sup> and all participants completed the baseline survey. We did not use imputation and retained all participants for analyses, as multilevel techniques and estimators used in the analyses (i.e., restricted maximum likelihood) are robust to missing data (Raudenbush & Bryk, 2002).

Any EWIF/EFIWs that occurred before the previous response (i.e., not within the time period for that response) were omitted from analysis. We examined reports of "other" EWIF/EFIW and determined if it represented a valid example of EWIF/EFIW. For example, one participant stated, "Coworker late had to stay later." This conflict was categorized as EWIF. Six "other" EWIF/EFIWs were deemed valid. The remaining 31 "other" EWIF/EFIWs could not be confirmed as work-family conflicts, were considered invalid, and omitted from analyses. After removing invalid reports, there were 189 EWIF and 255 EFIW. At least one EWIF was reported at 154 unique time points, and at least one EFIW was reported at 202 unique time points. Out of 106 participants, 63 reported at least one EWIF, 61 reported at least one EFIW, and 79 reported at least one EWIF or EFIW.

To justify multilevel modeling, we computed unconditional models for each dependent variable (EWIF occurrence, EFIW occurrence). Unconditional models were specified as having a level one (within day) outcome with no predictors and random intercepts and three levels of nesting. We statistically compared the  $-2$  log likelihood (i.e., deviance) statistics from a null model to a corresponding fixed-intercept general linear model. ICCs indicating the amount of variance at each level estimated by dividing the level-specific variability by the total variability (Raudenbush & Bryk, 2002). All comparisons of  $-2$  log likelihood were significant ( $p < .01$ ), indicating that multilevel modeling was warranted. Consistent with previous research (Shockley & Allen, 2015), there was little to no

<sup>3</sup> For some models there was no day-level variance, resulting in a singularity error message. Results were identical and error free when running these models using two levels (time points nested within persons).

<sup>4</sup> To test for potential response fatigue, we examined whether day of participation and time of response was associated with the number of valid responses. Day of participation was not associated with the number of valid responses in a day ( $\chi^2(14) = 21.00, p = .10$ ), and time of response was not associated with the number of valid responses ( $\chi^2(7) = 0.67, p = .99$ ). Table 3 shows one systematic predictor of responding, such that those who transitioned more frequently were more likely to respond compared to those with relatively fewer transitions.

**Table 2**  
Within-person correlations.

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11
1. EWIF	0.07	0.25											
2. EFIW	0.09	0.28	0.18**										
3. WF temporal	0.16	0.37	0.20**	0.22**									
4. FW temporal	0.13	0.33	0.21**	0.21**	−0.01								
5. WF spatial	0.14	0.35	0.16**	0.04*	0.76**	−0.06*							
6. FW spatial	0.13	0.33	0.08**	0.13**	−0.08**	0.73**	−0.07**						
7. Start of work	0.18	0.39	0.02	0.15**	−0.09**	0.35**	−0.13**	0.42**					
8. End of work	0.17	0.37	0.07**	−0.06*	0.36**	−0.13**	0.44**	−0.14**	−0.21**				
9. Eight AM	0.13	0.33	0.02	0.00	−0.12**	0.26**	−0.12**	0.35**	0.40**	−0.17**			
10. Six PM	0.12	0.33	0.06**	−0.06**	0.27**	−0.08**	0.32**	−0.12**	−0.17**	0.51**	−0.14**		
11. Monday	0.18	0.38	0.00	0.01	0.01	−0.02	−0.01	0.00	0.03	0.03	0.00	0.02	
12. Friday	0.15	0.35	−0.02	−0.03	0.01	0.04 <sup>+</sup>	0.03	0.02	0.00	0.00	0.01	0.01	−0.08**

EWIF = episodic work-to-family conflict occurrence. EFIW = episodic family-to-work occurrence. WF = work-to-family. FW = family-to-work. *n* range = 2237–2361. Within-person correlations are corrected for dependencies (Bakdash & Marusich, 2017).

\*  $p < .05$ .

\*\*  $p < .01$ .

**Table 3**  
Between-person correlations.

Variable	M	SD	1	2	3	4	5	6	7	8	9	12
1. Work flexibility <sup>a</sup>	2.33	1.00										
2. Family flexibility <sup>a</sup>	3.34	0.86	0.19*									
3. Work permeability <sup>a</sup>	2.75	0.87	0.34**	0.15								
4. Family permeability <sup>a</sup>	2.31	0.97	0.53**	-0.15	0.31**							
5. EWIF three day sum	1.78	2.29	0.21*	-0.13	-0.09	0.31**						
6. EFIW three day sum	2.41	3.60	0.18	-0.17	0.02	0.20*	0.35**					
7. WF temporal three day sum	3.61	2.41	0.32**	-0.02	0.10	0.19*	0.41**	0.58**				
8. FW temporal three day sum	2.81	2.00	0.34**	-0.04	0.18	0.30**	0.42**	0.49**	0.69**			
9. WF spatial three day sum	3.09	1.64	0.30**	0.06	0.14	0.15	0.37**	0.23*	0.61**	0.59**		
10. FW spatial three day sum	2.81	1.40	0.25**	0.02	0.17	0.16	0.34**	0.25*	0.49**	0.63**	0.68**	
11. Number of valid responses per ID	22.91	2.53	0.18	0.21*	0.15	-0.03	0.05	0.08	0.26**	0.24*	0.29**	-0.05

*N* = 106. EWIF = episodic work-to-family conflict occurrence. EFIW = episodic family-to-work occurrence. WF = work-to-family. FW = family-to-work.

<sup>a</sup> See information for flexibility and permeability measures in the supplemental file.

\*  $p < .05$ .

\*\*  $p < .01$ .

day-level variability for EWIF/EFIW, ( $\sigma^2 = 0.06$ ,  $\tau_{00} = 0.00$ ,  $\tau_{000} = 0.00$  for EWIF,  $\sigma^2 = 0.07$ ,  $\tau_{00} = 0.00$ ,  $\tau_{000} = 0.01$  for EFIW) and most variance occurred within day (95% for EWIF, 86% for EFIW). Nevertheless, to ensure proper standard error estimates we estimated variance at all three levels (Bliese et al., 2018).

### 3.2. Hypothesis testing

#### 3.2.1. Timing of work family conflict episodes

To explore Research Question 1, we entered time of day as a level 1 predictor in a multilevel binomial logistic regression with 0 indicating the first time point of the day (8 AM). We plotted estimated marginal means (probabilities of EWIF/EFIW occurrence at each signal) and their associated confidence intervals in Fig. 1.<sup>5</sup> A few important conclusions emerge when reviewing Fig. 1. First, EFIW follows a clear pattern, such that there is a morning spike after transitioning into work (10 AM signal), followed by a linear decrease into the evening, which dwindles to a near-zero probability of EFIW occurrence. EWIF on the other hand is relatively steady throughout the day, with a small, and non-significant increase in the late afternoon at the 6 PM signal and a gradual decrease in the evening. Interestingly, EWIF and EFIW are equally likely throughout most of the daytime (8 AM, 12 PM, 2 PM, and 4 PM signals). It is only in the morning (10 AM) signal where EFIW becomes more likely than EWIF and only in the late afternoon and evening (6 PM, 8 PM, 10 PM signals) where EWIF becomes more likely than EFIW.

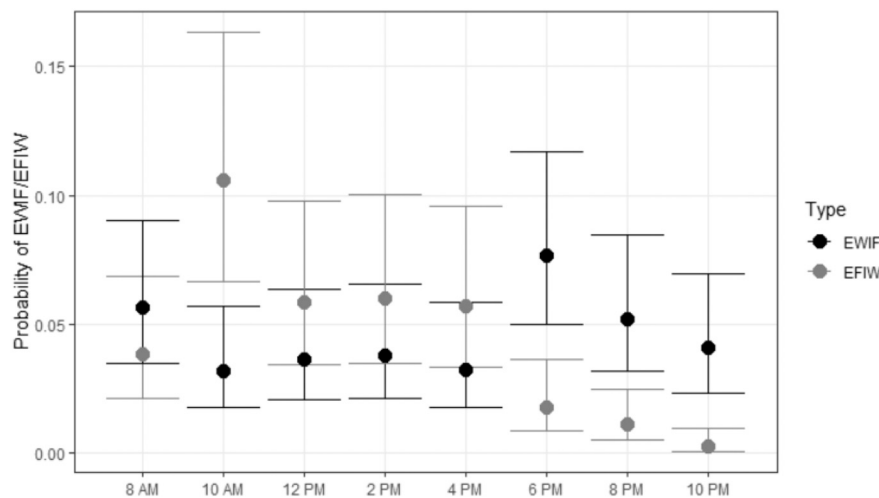
#### 3.2.2. Timing of work-family conflict episodes and transitions

Next, we posited that temporal and spatial (Hypothesis 1), scheduled (Hypothesis 2), standard time (Hypothesis 3), and standard day transitions (Hypothesis 4) are associated with increased likelihood of EWIF/EFIW occurrence. We entered time of day, work-to-family and family-to-work temporal and spatial transition occurrence, start and end of work, and 8 AM and 6 PM transition times separately as level 1 uncentered predictors of EWIF/EFIW occurrence in a multilevel binomial logistic regression. We entered beginning of week and end of week transitions separately as level 2 uncentered predictors of level 1 EWIF/EFIW occurrence. Transitions were left uncentered to aid interpretation (Bliese, 2016; Enders & Tofghi, 2007). Results are presented in the form of crude odds ratios. A crude odds ratio with a confidence interval above and excluding 1.00 indicated a greater likelihood of experiencing an EWIF/EFIW. For each analysis, coefficients can be interpreted as change in EWIF/EFIW when a transition occurs relative to no transition occurrence (i.e., 1 vs. 0).

Results for Hypothesis 1–4 are in Table 4. Hypothesis 1 was supported for both EWIF and EFIW. When individuals temporally transitioned between work and family, they were approximately five to six times more likely to experience an EWIF or EFIW compared to times when no temporal transition occurred. When individuals transitioned between work and family spaces, odds of experiencing an EWIF or EFIW increased to between 1.5 and four in comparison to non-spatial transition times. Regarding Hypothesis 2, start of work transition times were associated with EFIW (Crude OR = 3.40,  $p < .01$ ), but not EWIF. End of work transition times were also associated with EWIF (Crude OR = 1.90,  $p < .01$ ), but not EFIW. Thus, Hypotheses 2a and 2b received support only when EWIF/EFIW was in the same direction as the transition, consistent with our hypothesized self-regulation mechanism. Regarding Hypothesis 3, there was no significant association between the 8 AM transition time and EWIF or EFIW ( $p > .05$ ). There was a significant association between the 6 PM transition time and EWIF (Crude OR = 1.95,  $p < .01$ ) but EFIW was associated with reduced likelihood of EFIW (Crude OR = 0.41,  $p < .05$ ). Hypothesis 4 was not supported by the data, as Mondays were not associated with EWIF or EFIW, and Fridays were not associated with EWIF ( $p > .05$ ). Fridays were associated with approximately 50% reduced likelihood of EFIW (Crude

<sup>5</sup> Full results available from the first author upon request.





**Fig. 1.** Probability of experiencing EWIF/EFIW throughout the day. Signal time plotted on the x axis. Each signal, participants reflected on the previous two hours (e.g., 6 AM–8 AM for the 8 AM signal). Dots indicate estimated marginal means for each time point derived from multilevel logistic regressions. Bars indicate 95% confidence intervals around estimated marginal means. Non-overlapping confidence intervals across time and type of EWIF/EFIW indicate significant differences ( $p < .05$ ).

**Table 4**

Results for multilevel logistic regressions testing Hypotheses 1–4.

Hypothesis	Intercept	Crude odds ratio	95% CI LL	95% CI UL	Level 2 intercept variance	Level 3 intercept variance	Hypothesis testing results
1a. EWIF and WF temporal	0.03**	<b>5.35**</b>	3.70	7.73	0.00	0.80	Supported
EWIF and FW temporal	0.03**	<b>5.81**</b>	3.96	8.52	0.00	0.87	Supported
1a. EFIW and FW temporal	0.03**	<b>5.59**</b>	3.84	8.15	0.04	1.81	Supported
EFIW and WF temporal	0.03**	<b>5.32**</b>	3.75	7.53	0.01	1.65	Supported
1b. EWIF and WF spatial	0.04**	<b>4.01**</b>	2.75	5.87	0.00	0.92	Supported
EWIF and FW spatial	0.04**	<b>2.40**</b>	1.59	3.61	0.00	0.91	Supported
1b. EFIW and FW spatial	0.04**	<b>3.18**</b>	2.16	4.69	0.01	1.88	Supported
EFIW and WF spatial	0.04**	<b>1.57*</b>	1.04	2.36	0.03	1.80	Supported
2a. EFIW and START of work	0.03**	<b>3.40**</b>	2.38	4.85	0.04	2.01	Supported
EWIF and start of work	0.05**	1.16	0.75	1.78	0.00	0.98	Not supported
2b. EWIF and end of work	0.04**	<b>1.90**</b>	1.28	2.83	0.00	0.98	Supported
EFIW and end of work	0.05**	<b>0.49**</b>	0.30	0.81	0.04	1.82	Not supported
3a. EFIW and Eight AM	0.05**	0.96	0.60	1.54	0.03	1.81	Not supported
EWIF and Eight AM	0.05**	1.31	0.82	2.09	0.00	0.97	Not supported
3b. EWIF and Six PM	0.04**	<b>1.95**</b>	1.27	3.01	0.00	0.98	Supported
EFIW and Six PM	0.05**	<b>0.41**</b>	0.22	0.76	0.03	1.84	Not supported
4a. EFIW and Monday	0.05**	1.10	0.72	1.67	0.04	1.79	Not supported
EWIF and Monday	0.05**	1.13	0.72	1.79	0.00	0.97	Not supported
4b. EWIF and Friday	0.05**	0.82	0.49	1.38	0.00	0.97	Not supported
EFIW and Friday	0.05**	<b>0.52*</b>	0.29	0.95	0.03	1.76	Not supported

EWIF = episodic work-to-family conflict occurrence. EFIW = episodic family-to-work occurrence. WF = work-to-family. FW = family-to-work. Statistically significant values bolded for ease of interpretation.

\*  $p < .05$ .

\*\*  $p < .01$ .

OR = 0.52,  $p < .05$ ).

### 3.3. Supplementary analyses

We conducted several analyses to further probe our findings; rationale and results can be found in the supplemental file. Brief results are described here. We tested two sets of lagged associations for spatial, temporal, and scheduled transitions (Hypotheses 1 and

2) to probe directionality across time points. Although the findings were relatively weak, three significant effects suggested EWIF/EFIW was associated with increased likelihood of transitioning within the next couple of hours. Transitions predicted *reduced* likelihood of future EWIF/EFIW with one exception; start of work transitions were associated with greater likelihood of EFIW in the following time point.

We also conducted a dominance analysis to determine the relative importance of each transition type while accounting for interdependencies among the transitions. For both EWIF and EFIW, temporal transitions account for the largest percentage of overall variance explained, at 38.34% for EWIF and 30.73% for EFIW. For EWIF, spatial transitions explain the next most variance (26.50%), followed by end of work (17.53%), and 6 PM (17.63%) transitions. For EFIW, start of work transitions (27.08%) explain the next most variance followed by spatial (21.27%) and 8 AM (20.92%) transitions.

To assess whether rapid transitioning increases the potential for EWIF/EFIW, we ran the number of transition types (0–4) in a single time point as a categorical predictor of EWIF/EFIW occurrence. Results indicated a positive trend such that more transitions were associated with increased likelihood of EWIF/EFIW, particularly when participants experienced three (EWIF  $OR = 23.40$ , 95%  $CI = [7.89, 69.41]$ ; EFIW  $OR = 22.92$ , 95%  $CI = [7.63, 68.83]$ ) or four (EWIF  $OR = 19.32$ , 95%  $CI = [6.13, 60.91]$ ; EFIW  $OR = 46.09$ , 95%  $CI = [13.49, 157.50]$ ) transition types.

We also conducted hypothesis tests controlling for level 3 (person level) job demands and parental status, as well as level 1 (time point level) negative affect and fatigue to rule out spurious mood or energy associations, as well as a test for whether findings held after controlling for person-level work and family demands. All hypothesized conclusions were the same.

Finally, boundary theory suggests for those who keep work and family roles separate, transitions may require substantial effort to switch between role locations, psychological states, or tasks. In contrast, for those integrate work and family, transitions may flow easily, as roles are less psychologically and physically distinct (Ashforth et al., 2000). We tested this possibility by adding role boundary characteristics (flexibility and permeability) as a fixed level 3 predictor of the intercept and slope to the temporal/spatial and scheduled transition models. None of the moderation effects were significant ( $p > .05$ ), indicating transitions were similarly associated with EWIF/EFIW across different boundary management strategies. We also examined work and family flexibility and permeability as control variables for hypothesis tests 1–4. All hypothesized conclusions were the same.

#### 4. Discussion

The present study examined when work-family conflict episodes occur across the day and across the week. Overall, we challenge timing assumptions, provide a unique test of boundary theory tenets, and add to theoretical and empirical understanding of when work-family conflict occurs on a daily and weekly basis. Our study is the first to show and describe distinct patterns in EWIF and EFIW as they occur throughout the day. EFIW is most likely to occur in the morning with a subsequent linear decline throughout the day, while the chance of experiencing EWIF is relatively stable throughout the day. Additionally, diurnal patterns suggest EWIF and EFIW are equally likely to occur throughout much of the day, with EWIF becoming more likely than EFIW in the late afternoon and evening hours.

These patterns are shaped in part by periods of transition between work and family roles. When temporally transitioning from the work role to the family role, individuals were between five and six times more likely to experience an EWIF or EFIW compared to non-temporal transition times. When individuals transition spatially between work/family locations, they were between 1.5 and four times more likely to experience a work-family conflict compared to non-spatial transition times. In addition to self-reported transitions, work-family conflict was also more likely to occur during scheduled transition times to and from work. These transition patterns are asymmetrical, consistent with the notion that individuals may fail to regulate thought, emotion, and behavior as they cross work and family boundaries (Ashforth et al., 2000; Sonnentag & Kühnel, 2016). Specifically, EFIW was nearly 3.5 times more likely to occur during times when participants were scheduled to leave the family to start work, and EWIF was 1.9 times more likely to occur during times when participants were scheduled to leave work to begin family responsibilities, compared to other times of the day.

Associations between EWIF/EFIW and standard transition times and days (8 AM, 6 PM, Monday, Friday) were generally weaker, less consistent, and explained the least amount of variance in our dominance analysis compared to self-reported and scheduled transition times. Work-family conflict occurrence was not associated with morning standard transition times (8 AM response window) or transition days (Mondays, Fridays) as hypothesized. While EWIF was two times more likely to occur during evening transition times, EFIW was approximately 50% less likely to occur compared to other times of the day. We similarly found evidence that EFIW was less likely to occur on Fridays compared to other days of the week.

##### 4.1. Theoretical Implications

Our focus on multiple types of transitions adds clarity to the competing perspectives presented by Ashforth et al. (2000) and Matthews et al. (2010) regarding why and in what direction transitions are associated with work-family conflict. Self-reported transitions were strongly and similarly associated with EWIF and EFIW, suggesting impromptu transitioning may lead to *either* self-regulatory failure (Ashforth et al., 2000; Smit et al., 2016; Sonnentag & Kühnel, 2016), or to sacrificing resources for an alternative role (Matthews et al., 2010, 2014). In contrast, scheduled transitions and standard transitions were only associated with EWIF and EFIW consistent with the spillover rationale offered by boundary theory (Ashforth et al., 2000). In fact, standard end of day and end of week transitions were associated with *reduced* EFIW in direct contradiction to rationale posited by Matthews et al. (2010, 2014). Because scheduled and standard transitions are anticipated, they are unlikely to be viewed as undermining one role for another. Planned transitions may also have rituals that help people to move from one domain to the other (Ashforth et al., 2000), which may

further reduce the likelihood of work-family conflict.

Both directions of work-family conflict occur throughout the entire day, particularly EWIF. Current measurement and methodological choices (e.g., only measuring WIF in the evening, work-family conflict measurement items that describe transitioning) imply transitioning always accompanies work-family conflict. Counter to popular assumptions, our findings show people can have EWIF during the day and EFIW during the evening, and that transitioning from the current domain is not necessary for a work-family conflict to occur. Our findings align with recent research that frames work-family conflict episodes as decisions in which individuals *choose* one domain or the other (Powell & Greenhaus, 2006; Shockley & Allen, 2015). Our findings suggest such decision outcomes (choosing work or family) may not require making a transition out of the currently enacted domain.

Previous work primarily focuses on temporal transitions (e.g., Butts et al., 2015; Glavin & Schieman, 2010; Kossek et al., 2012) or combines temporal and spatial transitions into a single measure of transition activity (e.g., Matthews et al., 2010). By separating the two types, we demonstrate that both spatial and temporal transitions are associated with EWIF/EFIW. Relationships between temporal transitions and EWIF/EFIW are stronger and in some cases more than double the effect size of spatial transition relationships with EWIF/EFIW. Our dominance analysis findings echoed this pattern, suggesting temporal transitions explain more than two times the overall variance of spatial transitions. Theoretically, the difference in effect sizes suggests spatial and temporal transitions are unique and possibly operate in distinct ways. For example, temporal transitions may be quick, abrupt, or unexpected (e.g., attending to an unsolicited work email during dinner), primarily reflecting task switching within a single role. In contrast, spatial transitions may be planned or scheduled, and take time to enact (e.g., commute to work in the morning). It is this contrast in timing and expectation that may make temporal transitions more effortful to navigate or more prone to spillover. In support of this idea, the scheduled transitions in our study had similar effect sizes to spatial transitions.

Our study is unique in that we harmonize theory and data to better understand “when things happen” in the lived experience over time (Hopwood et al., 2021; Shipp & Cole, 2015). Our theoretically-driven time sampling extends boundary theory by showing transitions act as temporal guideposts for diurnal fluctuations in work-family conflict. We also show this tenet generalizes to different transition times and types, including transitions across time and space and scheduled transition times. Supplemental lagged analyses suggest associations are short-lived, and that rapid transitioning may dramatically increase the likelihood of EWIF/EFIW occurrence.

Finally, our study highlights differences in episodic work-family conflict compared to the more typically studied levels-based work-family conflict. In contrast to what is typically assumed using levels-based approaches, we show EWIF and EFIW can occur at any time, and EWIF appears equally likely to occur throughout the day. Also in contrast to levels findings (Matthews et al., 2010, 2014), we show EWIF and EFIW are associated with both directions of transitioning. Correlations also suggest moderate association between EWIF/EFIW and WIF/FIW levels, respectively. We argue this is in part because episodic work-family conflict is an aspect of the work-family conflict experience that is somewhat distinct from levels of work-family conflict. Episodic work-family conflict is a formative decision making event which includes appraisal and attributional processes, as opposed to a reflective sense that one domain is undermining another (Maertz et al., 2019; Powell & Greenhaus, 2006; Shockley & Allen, 2015). Levels-based measures are thought to stem from episodic experiences, although it is unclear exactly how and possibilities discussed are purely theoretical (Maertz et al., 2019; Maertz & Boyar, 2011; Smith et al., 2021). We contribute to a handful of studies that aim to understand the episodic work-family conflict experience, and we answer a unique question that is particularly apt for episodic work-family conflict: when do work-family conflict events arise? Our study uniquely positions time as a context that determines work-family conflict episode occurrence, suggesting work-family conflict episodes follow a distinct and perhaps predictable rhythm. We show work-family conflict events are most likely to occur with transitioning that is not tied to individuals' daily rhythms, although scheduled start (EFIW) and end (EWIF) transitions are also more modestly tied to work-family conflict occurrence. In the pursuit of understanding how episodic experiences inform levels-based perceptions, our findings suggest frequency, timing, and perhaps predictability of events are key factors to consider.

#### 4.2. Practical implications

The results speak to the importance of flexibility initiatives designed to alleviate tension between work and family. Flexibility can take two forms: flextime, which allows workers to choose when they work, and flexplace, which allows workers to choose where they work (Kossek & Michel, 2010). Strong effect sizes for temporal transitions suggest flextime may be a more effective strategy for reducing EWIF/EFIW compared to flexplace. Although temporal transitions would still occur, flextime allows workers to exert control over when temporal transitions are made, potentially dampening their effects on EWIF/EFIW (Kossek & Michel, 2010). This conclusion aligns with meta-analytic work, which shows a stronger relationship between flextime and levels of WIF compared to flexplace (Allen et al., 2013).

Effect sizes for temporal transitions were approximately twice the size of those for spatial or scheduled transitions, further suggesting informal task switching is a potent trigger point for EWIF/EFIW. Organizational practices and policies that clearly define work-home communication boundaries may be effective at reducing such transitions. For example, having email curfews that limit when work emails may be sent may help to reduce WIF (Butts et al., 2015). On an individual level, the results imply boundary management strategies which reduce temporal transitions may also be effective. For example, individuals may plan blocks of time in which they can focus on tasks for one role or the other and take steps to minimize interruptions (e.g., turn off cell phone notifications).

#### 4.3. Limitations and future directions

The week of participation was based on convenience, and our findings are limited to workers who primarily work standard hours. Another methodological concern is that Wednesdays were oversampled relative to other days of the week, resulting in more precise

estimates for Wednesdays compared to other days. Future studies might evenly sample across days in order to achieve the same level of precision across days. Including weekends would also be informative, as our findings clearly show EWIF and EFIW can happen at all times. A final methodological concern is participant fatigue or response sets. However, compliance remained consistent and high throughout the study, and analyses detailed in our supplementary file indicate little variance in EWIF and EFIW attributable to systematic changes over time.

We cannot determine whether transitions predict EWIF/EFIW occurrence, or EWIF/EFIW occurrence predicts transitions. The lagged associations were conducted as a first step to address this issue, and the results suggest potential bidirectionality. Future research might use qualitative or day reconstruction methods to disentangle temporal ordering. We also did not directly assess mechanisms such as resource use, or depletion (Ashforth et al., 2000; Matthews et al., 2010, 2014; e.g., Smit et al., 2016). Further exploring this idea is an important next step for identifying why and when transitions may elicit work-family conflict.

The present study highlights an important question for episodic work-family conflict research: are there differences in what individuals classify as EWIF/EFIW? The checklist measures used in the present study aim to reduce some of this ambiguity compared to previous free-response items. However, even the checklist items may not necessarily be perceived as a conflict to the participant. While this question also applies to levels-based assessments of work-family conflict (which are ostensibly shaped in part by episodes) (Maertz & Boyar, 2011), the issue becomes particularly salient when individuals must identify episodes as they occur. It would be interesting to see how often “objective” EWIF/EFIWs are correctly classified, and whether individual differences predict classification. An experience sampling study with couples could also tackle this question. Couples could report EWIF/EFIWs, and reports could be matched to determine the extent to which couples agree that an EWIF/EFIW occurred.

Exploring the timing and syncing of transition behaviors would be an interesting line of study. Future research might replicate the present study on a sample that has a working schedule entirely disconnected from standard transition times, such as rotating or night shift workers. It would also be insightful to align individuals' transition patterns with their family members to explore the extent that individuals align their transitions with important family stakeholders. The extent to which a focal individual's scheduled transition patterns match with other family or work stakeholders may yield insights into why unscheduled transitions occur. Additionally, it would be interesting to explore the implications of transition syncing for individual work-family balance and couple or family-level success and wellbeing. Commuting time, distance, or difficulty are additional factors that might alter the extent that spatial transitions in particular are associated with work-family conflict, as commutes might prolong the time available to complete the detachment-reattachment process when crossing boundaries.

Finally, we found EWIF/EFIW occurs as early as 6:00 AM and as late as 11:45 PM. Nearly half of all experience sampling studies in the work-family literature use one time point (Allen et al., 2019). Among studies that have more than one time point, work-family conflict is most often measured only once at the end of the day (e.g., Ilies et al., 2015) or in the afternoon after work (e.g., Garrosa-Hernández et al., 2013). Infrequent sampling has the potential to miss meaningful within-day variation in work-family conflict and correlates. Our findings also indicate researchers could tie their measurement observations to participants' schedules, rather than a specific time of day if hoping to capture work-family conflict events (Allen et al., 2019; Gabriel et al., 2018). The high frequency of EWIF/EFIWs found in the present study compared to previous work (e.g., Shockley & Allen, 2013; Shockley & Allen, 2015) suggests participants may forget or fail to report conflicts with wider time intervals.

## 5. Conclusion

The present study explored EWIF/EFIW embedded within the context of time. The findings indicate EWIF and EFIW each follow a unique daily rhythm, guided by scheduled and impromptu transitions. For years, time has been an overlooked and downplayed contextual factor within organizational research (Hopwood et al., 2021; Mitchell & James, 2001; Shipp & Cole, 2015). The present findings provide a rigorous and novel test of theoretical ideas that extend back 30 years, and yield new empirical insights into when work-family conflict is experienced. It is our hope that this paper inspires and informs research toward an understanding of adults' lived experiences managing work and family.

## CRedit authorship contribution statement

**Kimberly French:** Conceptualization, investigation, data curation, formal analysis, funding acquisition, methodology, project administration, supervision, visualization, writing – original draft and editing.

**Tammy Allen:** Conceptualization, methodology, resources, supervision, writing – review and editing.

**Kate Kidwell:** data curation, formal analysis, writing – review and editing.

## Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

## Acknowledgements

The authors would like to thank the funders who invested in this work: the SIOP Foundation's Lee Hakel Scholarship, the American Psychological Association's Dissertation Research Award, the University of South Florida Psychology Department's Walvoord Verizon

Wireless Work-Family Research Endowment in Honor of Dr. Tammy D. Allen. This research was also supported in part by the Sunshine Education and Research Center at the University of South Florida. The Center is supported by Training Grant No. T42-OH008438 from the Centers for Disease Control and Prevention/National Institute for Occupational Safety and Health (NIOSH). We would also like to acknowledge the work of Andrea Bevill, Alexandra Blume, Allegra Campbell, Sujie Chen, Molly Darby, Wednesday Radke, and Hyeyoung Yoon, who assisted with recruitment and data collection. Finally, we acknowledge scholars who provided comments and suggestions on writing, study design, and analysis, including Keaton Fletcher, Michael Braun, Judith Bryant, Kristen Salomon, and Paul Spector.

## Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.jvb.2022.103727>.

## References

- Ashforth, B. E., Kreiner, G. E., & Fugate, M. (2000). All in a day's work: Boundaries and micro role transitions. *Academy of Management Review*, 25, 472–491.
- Allen, T. D., Cho, E., & Meier, L. L. (2014). Work–family boundary dynamics. *Annual Review of Organizational Psychology and Organizational Behavior*, 1, 99–121.
- Allen, T. D., French, K. A., Braun, M. T., & Fletcher, K. (2019). The passage of time in work–family research: Toward a more dynamic perspective. *Journal of Vocational Behavior*, 110, 245–257.
- Allen, T. D., French, K. A., Dumani, S., & Shockley, K. M. (2020). A cross-national meta-analytic examination of predictors and outcomes associated with work–family conflict. *Journal of Applied Psychology*, 105, 539–576.
- Allen, T. D., Johnson, R. C., Kiburz, K. M., & Shockley, K. M. (2013). Work–family conflict and flexible work arrangements: Deconstructing flexibility. *Personnel Psychology*, 66, 345–376.
- Amstad, F. T., Meier, L. L., Fasel, U., Elfering, A., & Semmer, N. K. (2011). A meta-analysis of work–family conflict and various outcomes with a special emphasis on cross-role versus matching-role relations. *Journal of Occupational Health Psychology*, 16, 151–169.
- Beal, D. J., & Ghandour, L. (2011). Stability, change, and the stability of change in daily workplace affect. *Journal of Organizational Behavior*, 32, 526–546.
- Bakdash, J. Z., & Marusich, L. R. (2017). Repeated measures correlation. *Frontiers in Psychology*, 8, 456. <https://doi.org/10.3389/fpsyg.2017.00456>
- Bates, D., Maechler, M., Bolker, B., & Walker, S. (2015). Fitting linear mixed-effects models using lme4. *Journal of Statistical Software*, 67, 1–48. <https://doi.org/10.18637/jss.v067.i01>
- Bliese, P. D., Maltarich, M. A., & Hendricks, J. L. (2018). Back to basics with mixed-effects models: Nine take-away points. *Journal of Business and Psychology*, 33, 1–23.
- Bliese, P. D. (2016). Multilevel modeling in R (2.6): A brief introduction to R, the multilevel package and the nlme package. Retrieved from [https://cran.r-project.org/doc/contrib/Bliese\\_Multilevel.pdf](https://cran.r-project.org/doc/contrib/Bliese_Multilevel.pdf).
- Bliese, P. D., & Lang, J. W. (2016). Understanding relative and absolute change in discontinuous growth models coding alternatives and implications for hypothesis testing. *Organizational Research Methods*, 19, 562–592.
- Butts, M. M., Becker, W. J., & Boswell, W. R. (2015). Hot buttons and time sinks: The effects of electronic communication during nonwork time on emotions and work–nonwork conflict. *Academy of Management Journal*, 58, 763–788.
- Campos, B., Graesch, A. P., Repetti, R., Bradbury, T., & Ochs, E. (2009). Opportunity for interaction? A naturalistic observation study of dual-earner families after work and school. *Journal of Family Psychology*, 23, 798–807.
- Clark, S. C. (2000). Work/family border theory: A new theory of work/family balance. *Human Relations*, 53, 747–770.
- Chi, N., Yang, J., & Lin, C. (2018). Service workers' chain reactions to daily customer mistreatment: Behavioral linkages, mechanisms, and boundary conditions. *Journal of Occupational Health Psychology*, 23, 58–70.
- Desrochers, S., Hilton, J. M., & Larwood, L. (2005). Preliminary validation of the work–family integration-blurring scale. *Journal of Family Issues*, 26, 442–466. <https://doi.org/10.1177/0192513X04272438>
- Enders, C. K., & Tofighi, D. (2007). Centering predictor variables in cross-sectional multilevel models: A new look at an old issue. *Psychological Methods*, 12, 121–138.
- Frone, M. R., Russell, M., & Cooper, M. L. (1997). Relation of work–family conflict to health outcomes: A four-year longitudinal study of employed parents. *Journal of Occupational and Organizational Psychology*, 70, 325–335.
- Gabriel, A. S., Podsakoff, N. P., Beal, D. J., Scott, B. A., Sonnentag, S., Trougakos, J. P., & Butts, M. M. (2018). *Experience sampling methods: A discussion of critical trends and considerations for scholarly advancement*. Organizational Research Methods. Advance online publication.
- Garrosa-Hernández, E., Carmona-Cobo, I., Ladstätter, F., Blanco, L. M., & Cooper-Thomas, H. D. (2013). The relationships between family-work interaction, job-related exhaustion, detachment, and meaning in life: A day-level study of emotional well-being. *Revista de Psicología del Trabajo y de las Organizaciones*, 29, 169–177.
- Glavin, P., & Schieman, S. (2012). Work–family role blurring and work–family conflict: The moderating influence of job resources and job demands. *Work and Occupations*, 39, 71–98.
- Glavin, P., & Schieman, S. (2010). Interpersonal context at work and the frequency, appraisal, and consequences of boundary-spanning demands. *The Sociological Quarterly*, 51, 205–225.
- Greenhaus, J. H. (1988). The intersection of work and family roles: Individual, interpersonal, and organizational issues. *Journal of Social Behavior and Personality*, 3, 23–44.
- Greenhaus, J. H., & Beutell, N. J. (1985). Sources of conflict between work and family roles. *Academy of Management Review*, 10, 76–88.
- Hall, D. T., & Richter, J. (1988). Balancing work life and home life: What can organizations do to help? *The Academy of Management Executive*, 2, 213–223.
- Hopwood, C., Bleidorn, W., & Wright, A. G. (2021). *Connecting theory to methods in longitudinal research*. March 28. <https://doi.org/10.31234/osf.io/w5huz>.
- Hülshheger, U. R. (2016). From dawn till dusk: Shedding light on the recovery process by investigating daily change patterns in fatigue. *Journal of Applied Psychology*, 101, 905–914.
- Ilies, R., Huth, M., Ryan, A. M., & Dimotakis, N. (2015). Explaining the links between workload, distress, and work–family conflict among school employees: Physical, cognitive, and emotional fatigue. *Journal of Educational Psychology*, 107, 1136–1149.
- Kossek, E., & Michel, J. (2010). Flexible work schedules. *Handbook of industrial-organizational psychology*, 1, 535–572.
- Kossek, E., Ruderman, M., Braddy, P., & Hannum, K. (2012). Work–nonwork boundary management profiles: A person-centered approach. *Journal of Vocational Behavior*, 81, 112–128.
- Maertz, C. P., & Boyar, S. L. (2011). Work–family conflict, enrichment, and balance under “levels” and “episodes” approaches. *Journal of Management*, 37, 68–98.
- Maertz, C. P., Jr., Boyar, S. L., & Maloney, P. W. (2019). A theory of work–family conflict episode processing. *Journal of Vocational Behavior*, 115, Article 103331.
- Matthews, R. A., Barnes-Farrell, J. L., & Bulger, C. A. (2010). Advancing measurement of work and family role boundary characteristics. *Journal of Vocational Behavior*, 77, 447–460.
- Matthews, R. A., Winkel, D. E., & Wayne, J. H. (2014). A longitudinal examination of role overload and work–family conflict: The mediating role of interrole transitions. *Journal of Organizational Behavior*, 35, 72–91.



- McCormick, B. W., Reeves, C. J., Downes, P. E., Li, N., & Ilies, R. (2020). Scientific contributions of within-person research in management: Making the juice worth the squeeze. *Journal of Management*, 46, 321–350.
- Michel, J. S., Kotrba, L. M., Mitchelson, J. K., Clark, M. A., & Baltes, B. B. (2011). Antecedents of work–family conflict: A meta-analytic review. *Journal of Organizational Behavior*, 32, 689–725.
- Mitchell, T. R., & James, L. R. (2001). Building better theory: Time and the specification of when things happen. *Academy of Management Review*, 26, 530–547.
- Morgeson, F. P., Mitchell, T. R., & Liu, D. (2015). Event system theory: An event-oriented approach to the organizational sciences. *Academy of Management Review*, 40, 515–537.
- Nohe, C., Michel, A., & Sonnentag, S. (2014). Family–work conflict and job performance: A diary study of boundary conditions and mechanisms. *Journal of Organizational Behavior*, 35, 339–357.
- Podsakoff, N. P., Spoelma, T. M., Chawla, N., & Gabriel, A. S. (2019). What predicts within-person variance in applied psychology constructs? An empirical examination. *Journal of Applied Psychology*, 104, 727–754.
- Powell, G. N., & Greenhaus, J. H. (2006). Managing incidents of work–family conflict: A decision-making perspective. *Human Relations*, 59, 1179–1212.
- Presser, H. B. (2003). Race-ethnic and gender differences in nonstandard work shifts. *Work and Occupations*, 30, 412–439.
- Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods* (Vol. 1). Sage.
- Shipp, A. J., & Cole, M. S. (2015). Time in individual-level organizational studies: What is it, how is it used, and why isn't it exploited more often? *Annual Review of Organizational Psychology and Organizational Behavior*, 2, 237–260.
- Shockley, K. M., & Allen, T. D. (2015). Deciding between work and family: An episodic approach. *Personnel Psychology*, 68, 283–318.
- Shockley, K. M., & Allen, T. D. (2013). Episodic work–family conflict, cardiovascular indicators, and social support: An experience sampling approach. *Journal of Occupational Health Psychology*, 18, 262–275.
- Shockley, K. M., Clark, M. A., Dodd, H., & King, E. B. (2021). Work-family strategies during COVID-19: Examining gender dynamics among dual-earner couples with young children. *Journal of Applied Psychology*, 106, 15–28. <https://doi.org/10.1037/apl0000857>
- Smit, B. W., Maloney, P. W., Maertz, C. P., Jr., & Montag-Smit, T. (2016). Out of sight, out of mind? How and when cognitive role transition episodes influence employee performance. *Human Relations*, 69, 2141–2168.
- Smith, C. E., Wayne, J. H., Matthews, R. A., Lance, C. E., Griggs, T. L., & Pattie, M. W. (2021). Stability and change in levels of work–family conflict: A multi-study, longitudinal investigation. *Journal of Occupational and Organizational Psychology*, 95, 1–35.
- Sonnentag, S., Eck, K., Fritz, C., & Kühnel, J. (2020). Morning reattachment to work and work engagement during the day: A look at day-level mediators. *Journal of Management*, 46, 1408–1435.
- Sonnentag, S., & Kühnel, J. (2016). Coming back to work in the morning: Psychological detachment and reattachment as predictors of work engagement. *Journal of Occupational Health Psychology*, 21, 379–390.
- U.S. Department of Labor. (2019). Flexible schedules. Retrieved from <https://www.dol.gov/general/topic/workhours/flexibleschedules>.
- Wagner, D. T., Barnes, C. M., & Scott, B. A. (2014). Driving it home: How workplace emotional labor harms employee home life. *Personnel Psychology*, 67, 487–516.
- Weigelt, O., Siestrup, K., & Prem, R. (2021). Continuity in transition: Combining recovery and day-of-week perspectives to understand changes in employee energy across the 7-day week. *Journal of Organizational Behavior*, 42, 567–586.
- Zijlstra, F. R., & Rook, J. (2008). The weekly cycle of work and rest. In R. A. Roe, M. J. Waller, & S. Clegg (Eds.), *Time in organizations: Approaches and methods* (pp. 62–79). Routledge.