THE DYNAMIC CYCLE OF EXTERNAL TASK INTERRUPTIONS: AN ESM STUDY OF MULTIPLE ROLE MANAGEMENT

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Abstract

Multiple role occupants experience both intra- and inter-role external task interruptions frequently throughout their daily lives. External task interruptions are interruptions caused by a precipitating event in the environment. Though external interruptions have been associated with negative affect, the external interruption cycle and how it affects multiple role occupants daily lives has not been examined. The external interruption cycle consists of the chain of reactions subsequent to interruption. The current study examined the relationship between external interruptions, behavior, goal progress perceptions, and affective outcomes (positive and negative affect, vitality, and family and work satisfaction) in order to reveal how interruptions influence the well-being of multiple role occupants. Role centrality, polychronicity, experienced work-unit polychronicity, and task demands were examined as moderators of these relationships.

The current study utilized experience-sampling methodology, measuring the relevant variables at the survey level, at the end-of-day level, and the level of immediate experience. Fifty-two multiple role occupants (27 women, 25 men) participated in this study for seven consecutive days. Participants completed immediate experience measures 8 times a day.

Findings indicated that participants were most likely to engage in behaviors that attended to the interruption (pre-emption and simultaneity). These behaviors were not linked to perceptions of goal progress or affect at the immediate level of experience. At the immediate level of experience, goal progress was positively related to positive affect and vitality and negatively related to negative affect (in both the work and family domains). The end-of-day (EOD) results indicated that goal progress was positively

linked to end-of-day work satisfaction and family satisfaction. End-of-day perceptions of family goal progress were positively related to EOD vitality levels. Cross-level analyses indicate that experiences throughout the day influenced end-of-day measures. The results of this study underline the importance of examining both the work and family domains at multiple levels of experience to reveal the antecedents of well-being.

Chapter 1

Introduction

As more and more individuals in our society are simultaneously occupying roles in both the work and family domains, multiple role occupation and multiple role management are issues of growing concern to organizational researchers and practitioners. Multiple role occupants are becoming more common due to increasing numbers of dual-earner couples, working mothers with young children, single parent families, and individuals responsible for caring for elderly relatives (Stephens & Sommer, 1996). Several researchers have argued that attending to both work and family demands increases one's susceptibility to the negative effects of stress, as one's resources (time, energy, and attention) are consistently invested in these domains (Burke & Greenglass, 1987; Zedeck, 1992). Stress has mental, physical, and financial outcomes, affecting both the individual and society at large (Stephens & Sommer, 1996).

However, although the demands associated with multiple role occupation are great, studies have not found uniformly negative effects of multiple role occupancy. Both negative outcomes, such as role strain and psychological distress, (Cooke & Rousseau, 1984; MacEwan & Barling, 1994) and positive outcomes, such as ego gratification and increased self-esteem, (Gove, 1972; Sieber, 1974) have been associated with multiple role occupation. These findings, which indicate a complex interaction between the demands of multiple roles and the characteristics of those occupying them, have led researchers to question the processes and outcomes associated with the occupation and management of multiple roles, and the factors that influence these processes and outcomes.

Different reactions to balancing work and family roles may result as a function of the individual, the environment, and the person-environment interaction. An important

component of the work-family interchange is the extent to which task interruptions occur. Multiple role occupants are more susceptible to interruption in both the work and family domains than ever before due to technological advances (such as electronic mail and pagers) that facilitate more frequent communication between individuals (Fisher, 1998). This type of interruption, in which a precipitating event in the external environment interrupts the individual, is called an "external interruption" (Fisher, 1998). An example of an external interruption would be if an individual in the work domain received a call from the school nurse regarding his or her child or was interrupted while working on a project by a co-worker. External interruptions may be classified as either intra-role or inter-role interruptions. An intra-role task interruption occurs when one's task activity is interrupted by a demand from the same role. An example of an intra-role interruption at work would be when an individual is working on a particular project and is interrupted by a coworker who asks a question about a different project. An example of an intra-role interruption at home is when a child interrupts a mother who is paying bills with a request for transportation to a friend's house. An inter-role interruption occurs when one's current task activity is interrupted by a demand from a different role. The example of being interrupted at work by a call from the school nurse would constitute an inter-role interruption. Interruptions may increase psychological stress and strain in individuals because they delay task completion and goal progress. To date, few studies have examined the immediate effects of interruptions at work and home. The studies that have been conducted have generally focused on the negative elements of external interruption. The present study adds to this literature by examining positive and negative affective outcomes associated with interruptions in work and family domains.

External interruptions are often unpredictable in nature, as individuals are unaware of when they will occur and how long they will last. Mandler (1990) suggested that when an interruption unexpectedly occurs, arousal and negative affect may result because the individual is ill-prepared to respond to it. Carver and Scheier's (1981) control theory postulates that interruptions hinder behavior regulation and delay goal-oriented behavior. According to control theory, the delay of goal-oriented behavior increases the discrepancy between intended and actual behavior, and this discrepancy leads to negative affective reactions. The degree of negative affect is determined by the size of the discrepancy.

Research has supported the positive relationship between external interruptions and negative affect. In a study of external interruptions in the workplace, perceptions of role overload and pressure were correlated with the occurrence of an intra-role interruption that forced individuals to interrupt their current work task or work simultaneously on both the interrupting and interrupted task (Kirmeyer, 1988). A line of research by Williams and colleagues has found that the juggling of work and family role demands caused by inter-role interruptions is a daily stressor for working parents, resulting in decreased task enjoyment and greater negative affect (Williams, Suls, Alliger, Learner, & Wan, 1991; Williams & Alliger, 1994).

The purpose of the current study is to examine the full cycle of external task interruption in work and family settings. A within-subjects design is employed to examine the psychological processes and outcomes of interruption, and the influence of the individual, the environment, and the person-environment interaction on these processes and outcomes. The relationships between external task interruptions,

perceptions of goal progress, and subsequent affective outcomes relevant to the well-being of multiple role occupants (domain satisfaction, affect, and vitality) are explored. The moderating effect of personality and environmental variables relevant to external task interruption and multiple role occupation are examined. This study utilizes both the immediate and daily levels of experience to capture the dynamic cycle of processes and outcomes throughout the daily lives of multiple role occupants.

Chapter 2

Literature Review and Hypotheses

Literature Review

Behavioral Strategies for Responding to External Interruptions

The occurrence of external task interruptions may precipitate certain cognitive, affective, and/or behavioral responses. Kirmeyer (1988) examined behavioral responses to intra-role external interruptions in her study of police dispatchers. She identified three categories of behaviors that the dispatchers emitted in response to interruptions. The three categories conceptualized were: (1) sequential processing: attending solely to the main task and putting the interruption aside; (2) pre-emption: attending to the interrupting task and putting the main task aside; and (3) simultaneity: attending to the main task and the interrupting task at the same time.

The behavioral strategy an individual utilizes may be based on task characteristics of the main and interrupting tasks, characteristics of the individual, and the environment. Relative task demands, polychronicity, experienced work-unit polychronicity, and desired role investment are explored as factors in the selection of a behavioral strategy.

Effect of task demands. Task demands refer to the cognitive and attentional demands associated with a given task. The greater the task demands associated with a given task, the more attention the task requires. When the relative task demands of the main task and the interrupting task are considered, it is anticipated that individuals will generally choose to attend to the task perceived as having higher task demands. Using Kirmeyer's (1988) categorization, it is expected that individuals will generally choose to engage in sequential processing when the task demands associated with the main task are higher than the demands of the interrupting task. Pre-emption would be expected when the interrupting task is perceived to have higher task demands than the interrupted task.

When the two tasks have equivalent task demands, it is anticipated that individuals would be more likely to engage in simultaneity, in an attempt to attend to both tasks.

Effects of personality. Other researchers have examined the role of personality and the environment in the tendency to juggle more than one task. Polychronicity has been related to the individual tendency to prefer to be involved with more than one task at a time (Hall, 1983). Bluedorn, Kaufman, and Lane (1992) conceptualized this construct as a continuum of behavior, ranging from monochronic to polychronic tendencies. A person who is monochronic with multiple projects will fully complete one project before moving on to another project. A person who switches back-and-forth between the two projects will be considered more polychronic. Polychronic and monochronic preferences are considered to be personality traits, referring to long-standing preferences for time (Slocombe & Bluedorn, 1999). People high in polychronicity may be more likely than monochronics to choose simultaneity as a strategy for dealing with interruptions. Monochronics, on the other hand, may be more likely to attend to one task at a time, perhaps choosing to attend first to the task with the greater perceived demand. Kirmeyer (1988) found evidence for simultaneous attendance to tasks during task transitions: when individuals attended to the new task, both the previous task and the new task were given attention during the transition between tasks. Individuals with a more polychronic orientation have more transitions between tasks (and thus spend more time simultaneously attending to multiple tasks), as they switch between the tasks with greater frequency than individuals with a monochronic orientation. Monochronics, on the other hand, focus on one task at a time, with fewer transitions between tasks. Monochronics prefer to complete their current task before moving on to a new task, and thus should

display less simultaneity. Polychronicity has previously been studied as it relates to intra-role task juggling; the current study seeks to replicate and extend these findings to include the relationship between polychronicity and the tendency to juggle inter-role tasks as well.

Work-unit effects. Slocombe and Bluedorn (1999) introduced the construct "experienced work-unit polychronicity" to examine the extent to which an organization expects polychronic behavior. In their study, polychronic congruence (congruence between polychronicity as a trait and organizational preferences for polychronic behavior) was found to be positively related to organizational commitment and performance appraisals. This study seeks to examine the extent to which organizational expectations influence behavior when an interruption occurs. This will be accomplished by looking at the relationship between experienced work-unit polychronicity and behavioral responses to an interruption. Workers in an environment that promotes polychronicity may be more likely to attempt to deal with conflicting demands simultaneously than would workers in an environment that does not promote polychronicity. This study seeks to extend the preliminary work in this area by examining whether or not trait polychronicity and/or work unit polychronicity are related to the tendency to juggle different tasks (both intra and inter-role).

Role Centrality and Responses to Interruptions

The behavioral response an individual makes to an interruption may also reflect their desired investment of time and energy in a task. When an interruption occurs, the individual must decide whether he or she wants to invest in the main task (and therefore attend only to the main task), the interrupting task (attending only to the interrupting

task), or both tasks (simultaneously try to juggle both tasks). In the case of an inter-role interruption, the behavioral strategy an individual engages in may reflect not only their desire to invest in a task but their desire to invest in *a role*, as well. Role investment is defined as the maintenance of attitudes and engagement in behaviors consistent with a given role (Lobel, 1991). Work role investment consists of attitudes and behaviors which reflect an individual's "devotion to work roles" (Lobel, 1991). Family role investment consists of attitudes and behaviors which reflect an individual's "devotion to family roles" (Lobel, 1991).

The nature of role investment continues to change with the growing emphasis on "multi-tasking" (simultaneously attending to two or more tasks) and the new technology (such as portable and networked computers, electronic mail, pagers, etc.) that facilitates multi-tasking and allows for more frequent communication between individuals. Opportunities for investment in the family role while in the work role, and vice versa, have increased as the interface between work and family has become more and more blurred. The demands associated with the work role enter the family domain and demands associated with family roles enter the work domain, thus increasing opportunities for role investment. The mechanisms through which work enters the family domain and family enters the work domain are varied. For example, work may enter the family domain not only through the traditional path (the individual brings work projects home with them), but through e-mails, faxes, phone calls, and pager messages regarding work-related issues. Similarly, the family domain may enter the work domain through phone calls from school or home, e-mails, and pager messages.

External interruptions provide an opportunity for behavioral investment in the interrupting and/or the interrupted task. Social identity theory (Tajfel & Turner, 1985) provides a framework for understanding how individuals differentially invest in roles and the outcomes they experience as a result of resource investment. According to social identity theory, although we assume many roles in our lives, we associate ourselves with a particular role to give order to the environment, as well as allowing us to better define ourselves. Stryker (1980) suggested that individuals' multiple identities are hierarchically ordered by salience. The role that individuals primarily identify themselves by (the salient role) is at the top of the hierarchy. The existence of a salient or central identity has been cited as a determinant of the accessibility of behaviors and attitudes consistent with this identity in various situations (Boyanowsky & Allen, 1973).

Research has supported the notion that behavior is congruent with one's salient identity (Kirschenbaum & Merl, 1987; Leary, Wheeler, & Jenkins; Lobel & St. Clair, 1992; Stryker & Serpe, 1982). Kirschenbaum and Merl (1987) found in a sample of Israeli working women that women with a strong identification with their work role worked longer hours than those with a weaker work role identification. Similarly, Lobel and St. Clair (1992) found that individuals with a high level of work role identification reported higher levels of effort in their work role than individuals with low work role identification. These findings indicate that individuals allocate effort and energy in manner that is consistent with their salient role.

The desire to behave in a manner consistent with a salient role may be manifested in behavioral responses to inter-role interruptions. When an inter-role interruption occurs, the individual must choose to either invest in the role associated with the main

task or in the role associated with the interrupting task. Social identity theory (Tajfel & Turner, 1985) predicts that the desired response would be to invest in the salient role. Hogan and Roberts (2000; pg. 11) stated that "behavior-what we do at a given time- is a function of our identities" and that we utilize behavior to support our identities. When considering behavioral reactions, external inter-role interruptions provide individuals with the opportunity to behave in a manner consistent with the central role. From the perspective of social identity theory, when one is free to choose what behavior to engage in, that behavior should correspond to the central role. However, the characteristics of the situation may prohibit the individual from making their desired response. Task demands are one characteristic of the situation that may influence behavior when an interruption occurs. If the task demands associated with one task are stronger than the task demands associated with the other task, this indicates that one task is more urgent and requires more attention than the other. It is expected that the situation would exert a strong influence on behavior when the relative task demands are unequal. In such a situation, there are strong situational demands and the individual would be expected to attend to the task with higher demands regardless of their personal preferences. However, when task demands associated with the main and interrupting task are approximately equivalent, behavioral responses may be influence by one's social identity and role salience. In other words, when task demands are equivalent, a neutral situation exists which allows for personal preferences to play a role in behavior. Work centrality, the degree to which an individual's work role is central to their definition of themselves, and family centrality, the degree to which an individual's family role is central to their definition of themselves, indicate an individual's preference for behavior supporting a given role. When an inter-

role interruption occurs, and task demands are judged to be roughly equivalent, we would expect individuals high in work centrality to select the behavioral strategy that attends to the work role and individuals high in family centrality to select the behavioral strategy that attends to the family role. Individuals high in both work and family centrality would be expected to select a behavioral strategy that allows them to attend to both roles simultaneously. The relationship between work role identification and level of effort invested in the work role (and indirectly, the relationship between identification and performance) has been examined with cross-sectional research, however, the relationship between role identification and behavioral investment has not been examined with a repeated measures design. Additionally, the relationship between family role identification and subsequent behavioral investment in the family role has been overlooked.

Proposed Model

For insight into processes and outcomes associated with external task interruption, the full interruption cycle merits examination. The full interruption cycle includes the chain of events following the interruption. This includes behavioral responses to the interruption and the varied outcomes of the chosen behavior. It also includes, moderator variables, reflecting personal and environmental characteristics, which may influence the relationships between (1) interruptions and behavior and (2) behavior and individual outcomes. Figure 1 presents a model that predicts the type of responses that individuals make to external interruptions and the outcomes that may follow from the various response strategies.

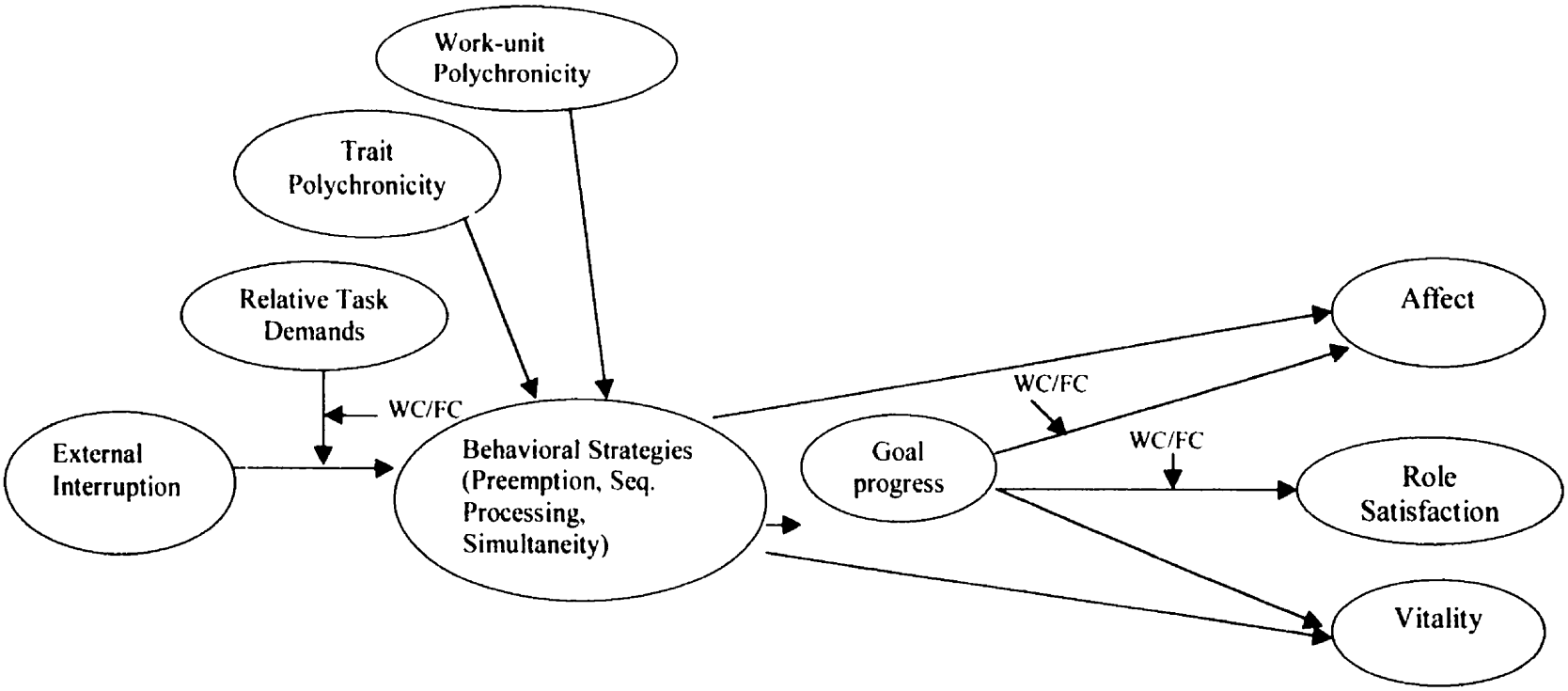

Figure 1: Model of External Interruptions.

The proposed model integrates elements of social identity theory and control theory, as well as research on external task interruption and work-family task juggling, to create a previously untested model of external task interruptions in the work and family domain. It expands on the published work on interruption in several ways. Kirmeyer (1988) examined behavioral and affective reactions of police dispatchers in response to intra-role external interruptions, but she did not examine or consider family-related interruptions. One family task may interrupt another family task (intra-role interruption) and family tasks may interrupt work tasks (inter-role interruption), influencing the behavior and affective outcomes of multiple role occupants. These relationships were not explored in Kirmeyer's (1988) study. Williams' line of work-family research on inter- and intra-role juggling (Williams & Alliger, 1994; Williams, Suls, Alliger, Learner, & Wan, 1991) provided information regarding the links between role juggling and affective outcomes, finding that both inter- and intra-role juggling were positively related to distress and intra-role juggling was negatively related to positive affect. Juggling, however, was operationalized more broadly than interruptions are in this study. Individuals were asked to indicate the extent to which they had been juggling more than one task in the past 30 minutes. Juggling may have occurred because of a precipitating event (external interruption) or because the individual initiated an interruption of their current task (internal interruption, Fisher, 1990). Williams et al. (1991, 1994) did not distinguish between these types of interruption in their analyses. The current study examines the relationship between intra- and inter-role *external* interruptions and specific behavioral strategies.

The level of analysis in this study is also different than that in most previous studies. The current model relates task, personal, and environmental characteristics to behavior at the immediate level of experience. These variables have previously been related to behavior at the global level. The immediate level of experience refers to thoughts, feelings, and behaviors that occur in reaction to immediate events, while the global level of experience refers to long-term experience evaluations (Williams & Alliger, 1994). In the present study, immediate thoughts and feelings will be assessed using experience sampling methodology and a diary study format. Using this methodology, the extent to which mood and affect covary with work and family role events and perceptions can be assessed. Experiences will also be assessed at the intermediate level by asking respondents to respond to an end-of-day diary containing measures of role satisfaction, vitality, and role conflict.

Overview. Figure 1 depicts the proposed relationships among the main variables in this study. According to this model, external interruption causes individuals to choose a behavioral strategy with competing demands or tasks. The choice of strategy is predicted to be influenced in part by the relative demands of the current and interrupting task. If the demands associated with one of the tasks is considerably higher than the other, it is expected that the individual will attend to that task first (i.e., sequential or preemptive strategies). Choice of strategy may also be influence by individual differences in polychronicity (i.e., one's personal preference for switching between two tasks rather than complete one task at a time). The individual may choose to complete one full task (the main task), interrupt the main task, or try to balance both tasks simultaneously. It is anticipated that polychronicity will be positively related to

engagement in simultaneity, as simultaneity represents the act of balancing more than one task at a time. Experienced work-unit polychronicity indicates the extent to which the individual's work environment is perceived as encouraging polychronic or monochronic behavior. Examining the environment, in addition to polychronicity as a trait, allows for investigation of the influence of organizational preferences on behavior. Experienced work-unit polychronicity is expected to be positively related to simultaneity. As the organizational environment becomes more encouraging of juggling multiple tasks, individuals may be more likely to engage in simultaneity. Another individual difference that my influence behavior strategy is role centrality. Research has found that individuals invest more effort in roles they identify with strongly (Kirschenbaum and Merl, 1987; Lobel and St. Clair, 1992) and engage in behaviors supporting their identification with the central role (Leary, Wheeler, & Jenkins; Stryker & Serpe, 1982). Thus, individuals high in work centrality, for example, may be likely to choose to attend to the work task when family and work tasks are in conflict. This tendency may be especially likely when the tasks are roughly equivalent in terms of task demands.

The influence of behavior strategy on perceptions of goal progress, mood, and role satisfaction will be also be explored. Additionally, the influence of perceptions of goal progress on mood, role satisfaction, and vitality will be examined within both the work and family domains. Finally, a relationship between domain goal progress and vitality at the immediate and end-of-day level of experience is proposed, as moderated by role centrality. The following sections describe the expected relationships in more detail. Many of the effects proposed in Figure 1 have not been tested in previous research in both work and family domains, or at the level of immediate experience. It is hoped that

the relationships between the variables in the model will provide a picture of the full cycle of interruption, from the interruption itself to the outcomes experienced by multiple role occupants.

Effects of Interruptions: Goal Progress and Affective Well-Being

Personal goals are a key concept in human motivation literature. How an individual chooses to respond to an interruption will effect goal progress and attainment for the involved activities. Carver and Sheier (1981) stated that interruptions lead to negative affect to the extent that they negatively impact perceptions of goal progress. The behavioral reactions that individuals have to external task interruptions may facilitate or hinder perceptions of goal progress in a given domain. For example, if an individual puts aside their current task to attend to an interruption, progress toward one's goal on the initial (current) task is temporally halted. The longer the interruption lasts, the greater the decline in perceived goal progress, and the greater the increase in negative affect. Other affective outcomes may be influenced by perceptions of goal progress: how satisfied an individual is with a particular role may be a reflection of how successful they are in achieving goals associated with that role. Social-cognitive theory (Bandura, 1986; 1988) posits that individuals seek self-satisfaction from attaining valued goals and discrepancies between an individual's actual performance and their goals results in self-dissatisfaction. This implies that individuals will be more satisfied with a role when they experience success in that role. This study seeks to examine the relationships between goal progress and role satisfaction in the work and family domains. To the extent that interruptions are

perceived as impeding progress in work and family roles, domain satisfaction should decrease.

Another relevant outcome of goal progress is the level of energy an individual has while in a role. Success in a given role may provide an individual with energy, while being in a role and not making progress may be depleting. The current study seeks to examine how goal progress is related to the level of energy, or "vitality" (Ryan & Frederick, 1999), an individual has while in a role and how this relationship may be moderated by the centrality of a role to the individual. These relationships are outlined in the upcoming sections.

Mood and Satisfaction

Mood and satisfaction are frequently examined outcomes of multiple role management because they are seen as indicators of overall mental well-being. As mentioned previously, research has established that a positive relationship exists between interruption and negative affect. Negative affect is likely to influence experiences in both one's current role as well as subsequent roles, as negative affect has been shown to spill over from one role into other roles (Repetti, 1989; Williams & Alliger, 1994). Mood spillover refers to moods from one domain being brought into another domain. For example, if an individual was feeling angry at the end of their workday, mood spillover would occur to the extent that this negative mood was brought home with them, rather than dissipating immediately after leaving the work role. Negative moods have been found to spillover from work to family (Repetti, 1989; Williams & Alliger, 1994) and from family to work (Williams and Alliger, 1994). Examining affect as a result of interruption provides the opportunity to examine the daily experience of a multiple role

occupant and how interruption contributes to the level of well-being experienced by multiple role occupants.

Satisfaction, the affective attitudes of an individual towards a given role (job, family), a facet of a role (promotion opportunities, salary), and towards life itself, has been the subject of extensive research in social and organizational psychology. After decades of focusing on the outcomes of satisfaction (primarily the relationship between job satisfaction and performance), research has turned recently to the determinants of satisfaction. This extensive research, both theoretical and atheoretical in nature, has unearthed varied elements of a role which help determine role satisfaction. In major theoretical models of human motivation, goal progress continues to appear preeminently as a determinant of satisfaction (Bandura, 1986, 1988; Carver & Sheier, 1990).

Bandura's (1986; 1988) social-cognitive theory posits that individuals seek self-satisfaction from attaining valued goals and discrepancies between an individual's actual performance and their goals results in self-dissatisfaction. This theory proposes that goal progress and satisfaction have a positive relationship.

The current study seeks to examine the relationship between daily goal progress towards role-related goals and daily satisfaction with the work domain and the family domain. It has been suggested by work-family stress models that experiences relative to a particular domain will be more strongly linked to satisfaction in that domain than they will be linked to overall satisfaction and satisfaction in the other domain (Frone, Russell, & Cooper, 1992; Kopelman, Greenhaus, & Connolly, 1983). Indeed, Edwards and Rothbard (1999) found support for this proposition. It is anticipated that goal progress in

a given domain (i.e., work or family) will be positively related to satisfaction in that domain (i.e., work or family satisfaction).

Research examining moderators of the role stressor-satisfaction link suggests that the identity-relevance of a stressor may play a moderating role in that relationship. Impediments to successful role performance are considered role stressors. The direct relationship between job stressors and well-being has been repeatedly examined, with mixed results (Cooper, Russell, & Frone, 1990; Ganster & Schaubroeck, 1991; Jex & Beehr, 1991). In order to clarify the relationship between job stressors and well-being, research, based upon social identity theory, examined the moderating influence of job involvement. While individuals base their self-evaluations to some extent on their role performance (Burke, 1991; Thoits, 1991), the role in question may be more or less central to an individual's identity. To the extent that the role is central to an individual's identity, the role stressor is considered to be identity-relevant and thus exert a greater impact on well-being than a non-identity-relevant stressor (Thoits, 1991). Indeed, research has supported the moderating influence of job involvement on job stressors and indicants of well-being (Frone & Major, 1988; Frone, Russell, & Cooper, 1995). Job involvement strengthened the relationship between job stressors and job dissatisfaction (Frone & Major, 1988) and job stressors and indicants of well-being (physical health and heavy alcohol abuse; Frone, Russell, & Cooper, 1995). It is expected that role centrality will moderate the relationship between goal progress and role satisfaction, strengthening the relationship between goal progress in a central role and satisfaction with the central role and weakening the goal progress-satisfaction link in the non-central role.

Vitality: the Resource Expansion Model vs. the Resource Scarcity Model

Resource investment has been associated with both the resource scarcity model and the resource expansion model of mental well-being (Marks, 1977). The resource scarcity model posits that individuals have limited resources and that resource investment in one role results in a scarcity of resources for other roles. According to the scarcity model, as individuals accumulate more roles, they have a greater likelihood of experiencing resource depletion and inter-role conflict. Resource investment is assumed to result in negative outcomes for the multiple role occupant. Research on inter-role conflict has supported the tenets of the role scarcity model, identifying three main types of resource depletion which result from occupation of work and family roles (Greenhaus & Beutall, 1985). The three main types of resource depletion identified in work-family research are: (1) time-based conflict (time spent in one role reduces time that may be spent in another role); (2) strain-based conflict (strain in one domain makes it more difficult to respond to the demands in the other domain); and (3) behavior-based conflict (the behaviors which are expected in one domain are incompatible with behavioral expectations in another domain) (Greenhaus & Beutall, 1985).

Despite research focused on the negative outcomes of multiple role occupation, positive outcomes have been identified as well. Research indicating that ego gratification (Gove, 1972) and increased self-esteem (Sieber, 1974) resulted from participation in multiple roles, as well as the finding that professional women perceived that their participation in their work role improved their marriages (Yogev, 1981), indicate that multiple role occupation is not solely associated with negative outcomes.

The resource expansion model posits that differential outcomes may result from resource investment, depending upon the role. "Some roles may be performed without

any net energy loss at all; they may even create energy for use in that role or other role performances" (Marks, 1977, p. 926). Indeed, Kirchmeyer (1992a; 1992b) has found resource investment in nonwork domains to be associated with increased resources available for participation in the work domain.

Discrepant findings regarding the outcomes of resource investment have led researchers to question factors that may be related to differential experiences of resource depletion or resource enrichment associated with a particular role. Froberg, Gjerdingen, & Preston (1986) proposed that high levels of involvement with a particular role should positively influence the favorable outcomes of resource investment in that role. Kirchmeyer (1992a; 1992b) found that nonwork involvement was positively related to endorsement of both negative and positive spillover statements. This study seeks to replicate Kirchmeyer's (1992a; 1992b) findings and, in addition, examine the relationship between work centrality and perceptions of resource enrichment and resource depletion.

An individual's "vitality", the feeling of being alive and having energy (Ryan and Frederick, 1997) is an indicator of an individual's resource depletion or enrichment. If an individual's resources are enriched by resource investment in a given role, it is anticipated that they would be energized in that role or for other roles. For example, if an individual invests in their work role and feels energized as a result of this investment, the individual's resources are being enriched by their work role. If an individual's resources are depleted by investment in a given role, they may not perceive themselves to be energized.

Social identity theory (Tajfel & Turner, 1985) posits that individuals desire resource investment (attitudinal and behavioral) in the role that is most central to their

self-identification (Lobel, 1991). Behavior that invests in an individual's central role, versus behavior that invests in a non-central role, would be expected to lead to greater feelings of vitality. When the individual behaves in a manner consistent with their central role, resources are being invested as the individual desires them to be invested. The behavior-vitality link has been supported in research examining autonomous and controlled behaviors. Autonomous behaviors, as defined by Deci and Ryan (1985) and Ryan (1995), are those behaviors that are perceived as flowing from an individual and expressing the individual's "self," while controlled behaviors are not perceived as an expression of the individual's identity. Research found a positive relationship between autonomous behaviors and vitality and a negative relationship between controlled behaviors and vitality (Kasser & Ryan, 2000; Ryan & Frederick, 1997; Sheldon & Kasser, 1995). The current study seeks to examine the behavior-vitality link as it relates to role-central behaviors.

Goal progress may also help determine the level of vitality an individual experiences. Each task an individual works on has performance implications. An individual's level of performance may influence their level of energy while working on that task. If the individual is performing well, they may feel encouraged to continue and energized by the positive outcomes they are experiencing as a result of their effort. Poor performance indicates to the individual that their outcomes do not reflect their efforts. They may feel that their energy is being depleted by this task.

While working on a task, perceptions of goal progress allow individuals to gage their level of performance. If an individual perceives that they are making progress on a goal, this perception indicates to the individual that their resource investment in a task

has positive consequences. Energy may increase as a result of goal progress, as resource investment is tied to positive outcomes. The individual may feel that they can attain their goal if they continue to invest their resources in the task. If an individual is not making progress towards a goal, they may feel that their resources are being depleted with no positive return. The individual perceives that they are no closer to completing the task, despite their efforts. It is anticipated that they would feel their energy level was being depleted while working on this task. When an individual perceives that they are making progress on a given task, they are expected to report greater feelings of vitality than when they do not perceive that they are making progress on a given task.

Levels of Analysis in Assessing the Quality of Experience

The most common method of assessing the quality of experience is the cross-sectional survey designed to assess global or general experiences. Although the retrospective accounts of experience provided by these measures may be appropriate for assessing stable or average perceptions or judgments, they are not well-suited for capturing the dynamic nature of emotional experience.

Lambert (1990) underlined the importance of identifying the processes through which work characteristics influence the family role and family characteristics influence the work role in understanding what is needed from work-family organizational policies. If the influence processes and resulting work-family balance structures are not understood, then programs are being established without a full understanding of the types of intrusions that multiple role occupants experience and the subsequent outcomes of these intrusions. The answer does not lie in one-time surveys of work-family conflict and the extent to which individuals tend to re-structure work so it doesn't interfere with

family and family so it doesn't interfere with work. The processes and resulting outcomes are dynamic, and should be measured as such. In order to examine the dynamic processes of work-family management a dynamic methodology must be adapted by researchers. Experience sampling methodology allows for dynamic processes to be captured. In the current study, the interruption cycle is being examined. Interruptions occur throughout the daily life of individuals, influencing their immediate perceptions as well as their daily perceptions, their immediate behavior, and their subsequent emotions. Behavior is best studied at the immediate level of experience, without the halo of time and subsequent experiences to distort perceptions. Perceptions of goal progress exist for current as well as on-going goals, and behavior's impact on goal progress has both short- and long-term implications.

Williams and Alliger (1994) conceptualized three levels of analysis that may be used to determine the method that would ideally be utilized to examine the researcher's variables of interest. Level 1 represents the level of current thoughts, behaviors, and feelings in reaction to immediate events. This measurement level would be assessed by asking an individual to report what their mood is "now." Level 2 measurement assesses short-term judgments (for example, a day), asking individuals to present their judgments based on that specified period of time. For example, if an individual were asked if they had a stressful day, they would reflect on their experiences over the period. Global, long-term experience evaluations, are given when the third level of measurement is used, such as asking an individual to report their overall life satisfaction.

The level of analysis selected must reflect the stable/dynamic nature of the variables of interest. While Level 3 measurement is appropriate for stable variables of

interest, the global, retrospective accounts given fail to reflect the facets of immediate experience (Csikszentmihalyi & LeFevre, 1989). Due to usage of Level 3 measurement (one-time measures) in the work-family literature, the variables examined are generally static in nature. Processes of work-family management are not examined, but rather, outcomes of processes. One-time measures of level of work-family conflict are related to psychological outcomes, physiological outcomes, affective outcomes. These studies do not provide information regarding the dynamics of work-family management and how these outcomes are influenced by daily experiences. Level 1 and Level 2 measurement allow for dynamic processes to be captured.

In the current study, the interruption cycle is being examined. Interruptions occur throughout the daily lives of individuals, influencing their immediate perceptions as well as their overall daily perceptions. The passage of time between experiences and reported perceptions decreases the accuracy of judgments and decreases the ability of researchers to capture dynamic processes. Level 1 and Level 2 measurement, which allow for greater detail and accuracy of reports regarding the incidence of interruptions, behavior, and reactions to role investment are appropriate for the examination of the interruption cycle. Level 1 and 2 measurement allow a micro-level examination of the dynamic outcomes and processes associated with our variables of interest.

In the current study, mood states, perceptions of goal progress, vitality, and behavioral responses will be assessed at Level 1 as dependent measures of experience. Individuals' mood states, perceptions of goal progress, vitality, and behavioral responses will be measured daily on multiple occasions in both work and family settings. Intrusions of one role into the other role will be used as a predictor of the dependent

variables. Daily vitality, work and family satisfaction, and goal progress will be measured at Level 2. Level 3 predictive measures will be work centrality, family centrality, polychronicity, and experienced work-unit polychronicity.

Hypotheses

This study will use experience sampling methodology to examine the effects of intra- and inter-role interruptions across multiple levels of psychological experience. The focus of the analyses will be on Level 1 and Level 2 variables from the conceptual framework reported in the last chapter. Specifically, the frequency and content of external interruptions will be assessed, as well as behavioral reactions to external interruptions, and subsequent affective experiences. The previous chapter presented a model of responses to interruptions, along with a review of the literature supporting the hypothesized links between variables. This chapter summarizes the specific hypotheses that follow from that model.

Responses to Interruptions

The literature review suggests that responses to interruptions will depend on characteristics of the individual, the interrupted task, and the interrupting task. The relative demands of one's current task and of the interruption should strongly influence one's behavioral responses to external interruption, such that the task with the strongest demands will most often warrant attention.

Hypothesis #1a: When one's current task has higher task demands than the interrupting task, individuals will be more likely to engage in sequential behavioral strategies than preemptive and simultaneous strategies.

Hypothesis #1b: When the demands associated with the interruption are higher than the demands of the current task, individuals will be more likely to engage in pre-emptive behavioral strategies than sequential or simultaneous strategies.

Hypothesis #1c: Individuals will be more likely to use simultaneous behavior strategies when the demands of the current task and interruption are approximately equal than when the demands of one of tasks are stronger than the other.

Individuals' responses to interruptions may reflect individual traits and attitudes as well as task demands associated with the interrupted and interrupting task. In particular, one's attitude toward work and family roles (e.g., role centrality) may influence which task – the current task or interrupting task– receives more attention. Individuals with a strong family role identity, for example, may be likely to resolve inter-role interruptions by focusing on the family task, especially when the tasks are equivalent

in demands. In the preceding literature review, social identity theory provided the conceptual rationale for a link between role centrality and behavioral investment strategies. From the perspective of social identity theory, when one is free to choose what behavior to engage in, that behavior should correspond to the central role. As Hypotheses 1a and 1b suggest, the tasks that individuals choose may often be determined by strong situational cues (i.e., the task demands of one task greatly outweigh the demands associated with another). In this situation, individual differences would be expected to play a negligible role in behavioral strategies subsequent to interruption. However, when there are equal task demands associated with the interrupting and current task, the situation exerts less influence on the individual, and behavioral strategies may vary as a result of individual differences. In the case of inter-role interruptions, it is expected that role centrality will influence one's behavioral response:

Hypothesis #2a: When responding to inter-role interruptions, individuals who are higher in

> family centrality than work centrality will be more likely to choose the behavioral strategy that addresses the family task (i.e., sequential processing when work interrupts family activities, and preemptive strategies when family interrupts work activities).

Hypothesis #2b: Individuals who are higher in work centrality than family centrality, will

> choose the behavioral strategy that attends to the work task (i.e., preemptive when work interrupts family and sequential when family interrupts work).

The literature review also suggested that responses to interruptions will be influenced by monochronic versus polychronic preferences (Hall, 1983). Individuals with a monochronic orientation prefer to complete one task before becoming involved with another task, while individuals with a polychronic orientation prefer to be involved with more than one task at a time (Hall, 1983). Given polychronic's orientation towards multiphasic activity, it is expected individuals who are more polychronic in nature would have a greater likelihood of simultaneously attending to multiple tasks than more monochronic individuals upon task interruption.

Hypothesis #3: Polychronicity will be positively related to the use of simultaneous behavioral strategies.

Preferred polychronicity (the personality trait) was distinguished from experienced work unit polychronicity, which indicates the extent to which polychronic behavior (simultaneity) is expected in the workplace (Slocombe & Bluedorn, 1999). When individuals are in a workplace in which polychronic behavior is the norm, their reactions to interruption may reflect the expectations of the workplace and they may engage in simultaneity to a greater extent than individuals in jobs which do not require a polychronic orientation. Thus, it is anticipated that:

Hypothesis #4: Experienced work unit polychronicity will have a positive relationship with engagement in simultaneity. This should especially be the case when a work task is interrupted by another work task.

Outcomes of Behavioral Strategies for Interruptions

Goal progress. Momentary perceptions of goal progress in a current task are linked to behaviors that attend to the current task and do not address interruptions. Behavioral strategies that are consistent with goal progress in the current task are sequential processing behavioral strategies, while pre-emptive behavioral strategies are consistent with goal progress in the interrupting task. The relationship between behavioral strategies and goal progress will be explored at the level of immediate experience. It is anticipated that:

Hypothesis #5a: Sequential processing behavioral strategies will be positively related to perceptions of goal progress in the current task.

Hypothesis #5b: Pre-emptive behavioral strategies will be negatively related to perceptions of goal progress in the current task.

Individual's end-of-day perceptions of goal progress in a specific role domain should be related to goal-relevant experiences throughout the day. Sequential processing allows for an individual to attend solely to a particular goal, while pre-emption and simultaneity indicate that the individual's goals have been interrupted. Strategies that allow for positive perceptions of goal progress throughout the day should be related to end-of-day perceptions of goal progress. The number of interruptions that occur throughout the day are also relevant to end-of-day perceptions of goal progress. When interruptions occur, they typically are not related to one's immediate goals. Consequently, even behavioral strategies that handle the interruption effectively may not be associated with feelings of goal accomplishment because no goal regarding that

interruption had been set. A pattern of behavior that would be consistent with perceptions of goal progress in a particular domain would be attending solely to that domain without interruption, thus without the need for pre-emptive and simultaneous behavioral strategies. Therefore:

Hypothesis #6: Perceptions of end-of-day goal progress should be negatively related to the number of interruptions experienced during the day and the use of pre-emptive and simultaneous strategies.

Momentary mood. The line of research by Williams and colleagues has indicated that multiple role juggling is a daily stressor for multiple role occupants, resulting in decreased task enjoyment and greater negative affect (Williams, Suls, Alliger, Learner, & Wan, 1991; Williams and Alliger, 1994). An implication of these findings is that individuals experience greater negative affect when focusing on multiple tasks than when they are focusing on one task at a time. The behavioral strategy which reflects focusing on two or more tasks is the simultaneous behavioral strategy (Kirmeyer, 1988), while pre-emption and sequential processing behavioral strategies reflect putting other tasks aside (either the interrupting or current task) to focus on one task. The relationship between behavioral strategies will be explored at the level of immediate experience. In consideration of research regarding the negative affective outcomes of multiple role juggling, the following hypothesis is proposed:

Hypothesis #7: Compared to sequential processing and pre-emptive behavioral strategies, simultaneous processing strategies will be more strongly related to negative affect and more weakly related to positive affect.

Carver and Scheir's (1981) control theory posits that goal progress is important determinant of affect. Control theory of behavior consists of cognitive and affective components, positing that people cognitively hold internal goals, process information about their current goals, and compare their internal goals with their current behavior. Carver and Scheier (1981) posited that affect is the result of goal progress. If a discrepancy exists between internal goals and current behavior, negative affect will result. The individual's negative affective reaction is determined by the size of the discrepancy and the importance of the goal. Goal progress reduces the tension-producing discrepancy between intended and actual behavior, thus reducing negative affect (Repetti, 1989; Williams & Alliger, 1994). The relationship between goal progress and affect will be explored at the immediate level of experience.

Hypothesis #8a: Perceived goal progress in the family domain will be negatively related to negative affect and positively related to positive affect.

Hypothesis #8b: Perceived goal progress in the work domain will be negatively related to negative affect and positively related to positive affect.

The importance of goal progress in the current task moderates the relationship between goal progress and affect, such that the more important the goal, the greater the relationship between goal progress and affect (Graham, 2000; Crocker & Graham, 1995;

Locke & Latham, 1990). As role centrality determines a hierarchy of goals, such that goals relevant to the central identity are more important than goals related to the non-central identity, the relationship between perceived goal progress and mood will be moderated by the centrality of the current role, such that:

Hypothesis #9a: Family centrality will moderate the relation between goal progress and affect in the family domain, such that the relation will be stronger for those high in family centrality.

Hypothesis #9b: Work centrality will moderate the relation between goal progress and affect in the work domain, such that the relation will be stronger for those high in work centrality.

Role satisfaction. An individual's level of satisfaction has also been posited to have a positive relationship with goal progress perceptions (Bandura, 1986; 1988). When an individual progresses toward a goal in a given role, they are expected to be more satisfied with that role than when they do not perceive that they are making progress. Goal progress perceptions may influence perceptions of all facets of that role, leaving the individual with an overall level of role satisfaction that matches goal progress perceptions. The relationship between goal progress perceptions and domain satisfaction will be explored at the end-of-day level of experience.

Hypothesis #10a: Perceived goal progress in the family domain will be positively related to family satisfaction.

Hypothesis #10b: Perceived goal progress in the work domain will be positively related to work satisfaction.

The centrality of the role associated with a goal with may influence the strength of the relationship between goal progress and role satisfaction. Research has suggested (Thoits, 1991) and supported (Frone & Major, 1988; Frone, Russell, & Cooper, 1995) the moderating influence of work centrality on the relationship between job stressors (which impede work performance) and work satisfaction. This finding suggests that the importance of the role to the individual's self-concept strengthens the relationship between experiences in that role and satisfaction. Based on this finding, it is anticipated that role centrality will moderate the relationship between goal progress and role satisfaction. This study seeks to extend previous findings regarding work centrality and levels of job satisfaction to include family centrality and levels of family satisfaction.

Hypothesis #11a: As family centrality increases, the positive relationship between goal progress in the family domain and family satisfaction will be strengthened; as family centrality decreases, the positive relationship between goal progress in the family domain and family satisfaction will be weakened.

Hypothesis #11b: As work centrality increases, the positive relationship between goal progress in the work domain and work satisfaction will be strengthened; as work centrality decreases, the positive relationship between goal progress in the work domain and work satisfaction will be weakened.

Vitality. Both the resource scarcity model and the resource expansion model (Marks, 1977) have been explored in research examining the resource investment of multiple role occupants. Subjective vitality, or the "subjective feeling of being alive and alert," (Ryan & Frederick, 1997) is an indicator of individuals' level of resources. According to social identity theory, individuals desire resource investment in their central role. Behaviors that are consistent with resource investment in the central role are expected to produce more resources than behaviors that are inconsistent with an individual's identity. Vitality will be explored at both the immediate (Hypotheses #12, 12b, 13a, 13b) and end-of-day (Hypotheses #14, 15a, 15b) levels of experience.

Hypothesis #12a: Vitality will be lower when the current role is pre-empted by a role that is lower in centrality than when it is pre-empted by a role that is higher in centrality.

Hypothesis #12b: Vitality will be higher when the current role is pre-empted by a role that is higher in centrality than when it is pre-empted by a role that is lower in centrality.

Hypothesis #13a: Vitality will be lower when sequential processing delays working in the role that is higher in centrality.

Hypothesis #13b: Vitality will be higher when sequential processing allows the role that is higher in centrality to be finished.

If resource investment leads to goal progress, it is anticipated that individuals will feel energized due to the return on their investment. If individuals do not perceive goal progress, resource depletion may be felt due to the lack of perceived results.

Hypothesis #14: Vitality will be positively related to goal progress.

Role centrality is anticipated to moderate the relationship between vitality and goal progress. Making goal progress towards identity-relevant goals is anticipated to create greater vitality than goal progress towards non-identity relevant goals.

Hypothesis #15a: Family centrality will moderate the relationship between family goal progress and vitality, such that as family centrality increases, the relationship will be strengthened.

Hypothesis #15b: Work centrality will moderate the relationship between work goal progress and vitality, such that as work centrality increases, the relationship will be strengthened.

Chapter 3

Method

Participants

Fifty-two working parents (25 males, 27 females) volunteered to participate in this study. Participants were recruited from organizations and day care centers throughout the Albany area. Each individual was paid $40 for their participation. The majority of participants were employed in professional occupations as test administrators, publishing representatives, and computer programmers. All participants were employed full-time and had a child/children 18 years of age or younger. Participant's ages ranged from 21 to 59, with an average of 37. Table 1 presents further demographic information.

Table 1

Demographic Information

Variable	*Sample*
N	52
Gender (percentage)	
Male	48%
Female	52%
Average age (SD)	37(8.92)
Ethnicity (percentage)	
Caucasian	82%
African-American	6%
Hispanic	8%
Asian	4%
Marital status (percentage)	
Married	75%
Divorced	10%
Separated	2%
Co-habitating	13%
Number of children (percentage)	
1	47%
2	37%
3	8%
4	8%
Number of children under 6 years of age (percentage)	
0	42%
1	48%
2	8%
3	2%
Number of children between 6 and 10 years of age (percentage)	
0	75%
1	21%
2	4%
Number of children over 10 years of age (percentage)	
0	63%
1	10%
2	21%
3	6%

Signaling Devices

Participants were given Casio BG-142 Multi-Schedule Alarm wristwatches for the duration of the study. The wristwatches were used to signal participants to complete the experience-sampling diary. The watches were programmed to sound eight alarms per day for seven days at randomly selected times between the hours of 9:00AM and 8:00PM, with the provision that any two alarms had to be separated by at least 30 minutes. A separate alarm schedule was created for each individual for each day of the study.

Procedures

Prior to participating in the experience-sampling component of the study, each participant met individually with me for a 30-minute orientation. During the orientation, the alarm response procedure for the experience-sampling diary was reviewed with the participant, the diary items for both the experience-sampling and end-of-day diaries were explained, and any questions the participant had were answered. One-time measures of demographic information, work centrality, family centrality, work-family conflict, preferred polychronicity, experienced work-unit polychronicity, and family and work satisfaction measures were completed at that time.

On the day following the initial interview, participants started completing their diaries and continued completing them for seven consecutive days. They had a meeting with me after the seventh day to return the watch and diaries, as well as complete a study reaction sheet. At this meeting they were paid $40 for their time and told the hypotheses of the study.

Measures

Survey measures

The survey measures were taken during the initial meeting. The item scores were summed and averaged for each scale.

Work centrality: Work centrality was measured with 10 items from a scale developed by Paullay, Alliger, and Stone-Romero (1994). These items are designed to assess how central an individual's work role (in general) is to their self-definition, rather than how temporarily involving a particular job is (Paullay et al., 1994). Paullay et al. (1994) found this measure to have adequate internal consistency (α = .80). Responses to all items were made on a seven-point scale (1= Strongly Disagree, 7= Strongly Agree). Coefficient alpha in the present study was .80. This measure is presented in Appendix A.

Family centrality: A 10-item scale based on Paullay et al.'s (1994) work centrality measure was used to measure family centrality. Items from the Paullay et al. (1994) scale were reworded to reflect how central one's family role is to their self-definition. Consistent with the approach used for work centrality, items focused on self-definition as opposed to family involvement, which reflects temporary involvement in the family role. This measure was found to have acceptable internal consistency (α = .85) in previous research (Auerbach & Williams, 2000). Coefficient alpha in the present study was .77. This measure is presented in Appendix B

Polychronicity: Slocombe and Bluedorn's (1999) 5-item preferred polychronicity scale was used to measure individual differences in polychronicity. This scale measures trait polychronicity, defined as the individual tendency to be involved with more than one task at a time (Hall, 1983). Slocombe and Bluedorn (1999) found this scale to have

adequate internal consistency (α = .85). Responses to all items were made on a seven-point scale (1= Low, 7= High). Coefficient alpha in the present study was .77. This measure is presented in Appendix C.

Experienced work-unit polychronicity: Slocombe and Bluedorn's (1999) 8-item experienced work-unit polychronicity scale was used. This scale measures the extent to which polychronic behavior is expected in one's work environment. Slocombe and Bluedorn (1999) found this scale to have adequate internal consistency (α = .83). Responses to all items were made on a seven-point scale (1=Low, 7=High). Coefficient alpha in the present study was .86. This measure is located in Appendix D.

Work satisfaction: Eighteen items from Spector's (1985) Job Satisfaction Survey were selected to assess one's overall satisfaction with their current job. The facets of work satisfaction measured were: benefits, co-workers, supervisor, communication, operating procedures, promotion, and compensation satisfaction. Responses were made on a six-point scale (1=Disagree Very Much, 6= Agree Very Much). Spector (1985) found that the composite scale had high internal consistency (α = .91). This measure had a coefficient alpha of .76 in the current study and is presented in Appendix E.

Family satisfaction: Ten items from Carver and Jones' (1992) Family Satisfaction Scale were used to measure global satisfaction with the family domain. These items assessed individual's satisfaction with various facets of their family role. Specifically, items assess satisfaction with family life, family tasks, partner, children, and extended family. A six-point scale (1=Disagree Very Much, 6= Agree Very Much) was used for responses Carver and Jones (1992) found this scale to have very high internal consistency

(α = .95). . Coefficient alpha in the current study was .85. This measure is presented in Appendix F.

Work-family conflict: Two items from Frone, Russell, and Cooper's (1992) work-family conflict scale were reworded to measure the extent to which work demands were perceived as interrupting family activities: "How often do job-related tasks or activities interrupt your family activities?" and "How often do you end up using time usually reserved for family tasks for work tasks instead?" Frone, Russell, and Cooper (1992) found their two-item measure of work-family conflict to have adequate internal consistency (α = .76). Responses to all items were made on a seven-point scale (1-Never, 7=Very Often). In the present study, coefficient alpha was .81. This measure is presented in Appendix G.

Family-work conflict: Two items from Frone, Russell, and Cooper's (1992) work-family conflict scale were reworded to measure the extent to which family demands were perceived as interrupting work activities: "How often does your homelife interfere with your responsibilities at work?" and "How often do you end up using time at work for family-related tasks?" In Frone, Russell, and Cooper (1992), this two-item measure of family-work conflict to had a coefficient alpha of .56. Responses to all items were made on a seven-point scale (1-Never, 7=Very Often). In the present study, coefficient alpha for this scale was .84. This measure is presented in Appendix G.

Experience-Sampled Diary Measures

These measures were taken 8 times per day for seven days. The item scores were summed and averaged for each scale. Scales were mean-centered within-subjects for the determination of coefficient alpha. Appendix H presents these measures.

Main activity: Participants indicated the main activity they were involved with for the half hour preceding the alarm by checking one of four activity categories: family-related, work-related, personal/leisure, other. Participants also provided a brief description of the activity they were engaged in.

Positive and negative affect: Affect was assessed with the Positive and Negative Affect Schedule (PANAS) (Watson, Clark, & Tellegen, 1988), which consists of 20 adjectives identified as positive affect and negative affect. Participants were asked to indicate the extent to which each item described how they felt when the alarm sounded (1 = not at all, 7 = very much).

The positive affect scale consisted of the ten items (α = .81) identified as positive affect in the PANAS scale. Radosevich and Williams (1999) found this scale to have acceptable internal consistency (α = .87) in a diary study.

The negative affect scale consisted of the ten items (α = .83) identified as negative affect in the PANAS scale. Radosevich and Williams (1999) found this scale to have acceptable internal consistency (α = .79).

Vitality: Two adjectives, based on Ryan & Frederick's (1997) conceptual definition of vitality as the subjective feeling of being alive and having energy, were constructed: energized and alive/vital. A 7–point scale was used for participants to respond to the items (1= not at all, 7 = very much). Coefficient alpha for this scale was .74.

Perceived task demand of current task: Three items were constructed for this study to assess the demands of one's current activity. Individuals were asked to judge (1) how much attention did/does the main activity require, (2) how urgent was/is the main

activity, (3) overall, how demanding was/is the main activity. These items were based on the conceptual definition of task demands provided by Fox, Dwyer, and Ganster (1993). A five-point scale (1=Not Much, 5=A Lot) was used for participants to respond to the items. Coefficient alpha for this scale was .83.

Goal progress on current task: Goal progress was measured with two items asking individuals to report (1) "how efficient were/are you while working on the main activity," and (2) "how happy are you with your progress on the main activity comprised the goal progress on the current task scale." A five-point scale (1=Not Very Much, 5=A Lot) was used for participant responses. Coefficient alpha for this scale was .95.

Interruption occurrence: Individuals were asked if they had been interrupted (besides by the beeper) while working on the main activity. At their orientation, an interruption was defined to the participants as a disruption of their current activity by an external source. For example, if they decided to stop what they were doing and get coffee, that would not be considered an interruption because the source of the interruption was internal. If they had been interrupted while working on a task, they were asked the cause of the interruption (phone call/pager; person interrupted them; e-mail) and what type of activity the interruption was related to (family-related, personal/leisure related, job-related, other).

Perceived task demands of interruption: Three items were constructed for this study based on the conceptual definition of task demands. Individuals reported (1) how much attention did/would the interruption require, (2) how urgent was the interruption, (3) overall, how demanding was the interruption. A five-point scale (1=Not Much, 5=A

Lot) was used for participants to respond to the items. Coefficient alpha for this scale was .84.

Behavioral strategy: The manner in which individuals handled the interruption was assessed by asking the question: "Which best describes how you handled the interruption?" Individuals checked off one of three behavioral responses (a "no response" option was provided as well, to eliminate occurrences that were not considered to be interruptions as conceptualized in this study). The response options were based on the categories conceptualized by Kirmeyer (1988) in her observational study of police dispatchers' behavior. The responses reflected Kirmeyer's (1988) behavioral categories as follows: (1) sequential processing: "I continued my main task and put the interruption aside"; (2) preemption: "I stopped work on the main task, leaving it unfinished, and attended to the new task"; (3) simultaneity: "I attempted/am attempting to juggle both tasks somewhat simultaneously."

Goal progress on interrupting activity: One item assessed goal progress on the interrupting activity by asking, "How effectively did you handle the interruption?" on a seven-point scale (1=Very Poorly, 7=Very Well).

End-of-Day Measures

End-of-day measures were completed once each day after the eighth experience-sampling diary entry had been completed. Item scores were summed and averaged for

scale scores. Scales were mean-centered within-subjects for the determination of coefficient alpha. Appendix I presents these measures.

Work-family conflict: The same two items from Frone, Russell, and Cooper's (1992) work-family conflict scale that were utilized as the survey measure of work-family conflict were used as the end-of-day measure of work-family conflict. Responses to all items were made on a seven-point scale (1-Never, 7=Very Often). Coefficient alpha was .79.

Family-work conflict: The same two family-work conflict items from Frone, Russell, and Cooper's (1992) scale used for the survey measure of family-work conflict were utilized to measure end-of-day perceptions of family conflicting with work. Responses to all items were made on a seven-point scale (1-Never, 7=Very Often). Coefficient alpha for this scale was .81.

Family goal progress: One item assessed overall perceived family goal progress, "How much progress did you make towards family goals today?" Responses to this item were made on a seven-point scale (1=None, 7=A Lot).

Work goal progress: One item assessed overall perceived work goal progress, "How much progress did you make towards work goals today?" Responses to this item were made on a seven-point scale (1=None, 7=A Lot).

Family satisfaction: Three items were constructed to measure overall satisfaction with family tasks or projects, overall satisfaction with the individual's partner, and overall satisfaction with the individual's children. Responses were made on a seven-point scale (1=Not at all, 7=Very Satisfied). Responses to the three items were combined with the individual's response to the one item FACES scale (Kunin, 1955), a frequently

used measure of overall job satisfaction (Fisher, 2000). This study re-worded the item to reflect overall family satisfaction, asking individuals to "draw a circle around the face that best expresses how you feel, in general, about your family role today, including your family members and family tasks or projects." Seven faces were presented. Coefficient alpha for the combined scale was .78.

Work satisfaction: Three items were constructed to measure overall satisfaction with work tasks or projects, overall supervisor satisfaction, and overall co-worker satisfaction. Responses were made on a seven-point scale (1=Not at all, 7=Very Satisfied). The individual's response to the one item FACES scale (Kunin, 1955) was combined with their responses to the three other items to represent their overall work satisfaction. The FACES scale asked individuals to "draw a circle around the face that best expresses how you feel, in general, about your job today, including the work, supervision, and the people you work with." Seven faces were presented. Coefficient alpha for the combined scale was .81.

Vitality: Seven items from Ryan and Frederick's (1997) vitality scale were utilized to measure end-of-day vitality. These items are designed to assess individual's feelings of being energetic and alive (Ryan & Frederick, 1997). Ryan and Frederick (1997) found this measure to have acceptable internal consistency (α = .89). Participants were asked to indicate the extent to which the items described how they currently felt. Responses to all items were made on a seven-point scale (1=Not at all, 7=Very true). Coefficient alpha was .86.

Work-family separation: One item assessed perceived separation of work and family domains: "To what extent were you able to keep work and family tasks separate today?" Responses were made on a seven-point scale (1=Not at all, 7=Very true).

Work-family juggling: One item assessed perceived work-family juggling: "To what extent did you feel that you had to juggle work and family tasks at the same time today?" Responses were made on a seven-point scale (1=Not at all, 7=Very true).

Data Analysis

The hypotheses were analyzed using various within-subjects multivariate techniques. The main analyses of daily and EOD diaries were conducted using hierarchical linear modeling (HLM) (Bryk & Raudenbush, 1992) and pooled time-series analyses (Sayrs, 1989). These techniques were utilized due to their ability to analyze longitudinal and cross-level data. Pooled time-series analysis was used when the number of responses for individuals was not robust enough for HLM analysis.

HLM analyses were used to examine the relationships between immediate experience measures of goal progress and positive affect, negative affect, and vitality (and the moderating influence of work and family centrality on these relationships). HLM analyses were also used to examine the relationships between immediate experience measures of current task demands and positive affect, negative affect, and vitality (and the moderating effect of work and family centrality on these relationships). The longitudinal data collected for the present study was multilevel, consisting of responses within-individuals (immediate experience and end-of-day diary responses) and between-individuals (survey measures). HLM allows for cross-level analyses to be conducted. In the present HLM analyses, within-individual responses are considered

level-1 variables and between-individual responses are considered level-2 variables. The level-1 variables that were part of the HLM analysis in this study were the individual diary responses (immediate level of experience). These variables were individual-centered for this study. The level-2 variables were the survey measures (work and family centrality, polychronicity, experienced work-unit polychronicity). For the current analyses, a two-stage HLM process was utilized. In stage one (level-1 analysis), the relationships between level-1 variables were assessed. The outcome of this stage of analysis was an intercept term and a slope term estimated separately for each individual for each relationship. For example, the relationship between immediate experience measures of goal progress and positive affect was measured at the first stage. The result of the level-1 analysis of this relationship was 52 (number of participants) slope and intercept terms describing the relationship between immediate experience measures of work goal progress and positive affect (i.e., 52 individual regression lines describing this relationship). In stage 2 (level-2 analysis), the extent to which the level-2 variables accounted for variance across individuals in the level-1 slopes and intercepts was assessed. For example, the extent to which work centrality moderated the relationship between immediate experience measures of work goal progress and positive affect was examined.

Pooled time series analysis was used to test the hypotheses involving behavioral responses to external interruption as well as those that involved end-of-day measures. The number of observations per individual (the level-2 variable) were not sufficient for HLM analysis. Pooled time-series analysis (Sayrs, 1989) combines time series and participants. In this procedure, ordinary least squares regression analysis is used on the

combined data set with the individual diary unit is the unit of analysis. This approach allows for the separation of between- and within- subjects variance, permitting testing of between- and within- subject variables. In the current analysis, between-subjects variance was removed in one step by entering N-1 dummy-coded vectors. At step 2, the main variables of interest were measured. At step 3, an interaction term was entered (when appropriate). For example, when examining the relationship between end-of-day family goal progress and family satisfaction as moderated by family centrality, the following procedure was used: at step 1, N-1 subject vectors were entered, at step 2, family satisfaction was regressed on family goal progress, at step 3 a Family Goal Progress X Family Centrality interaction term was entered.

Chapter 4

Results

Results

Descriptive Statistics

Table 2 presents the descriptive statistics for the main survey, end-of-day, and ESM variables of interest. The item scores were summed and averaged for each of the scales. The descriptive statistics for the survey measures indicate that, overall, the family role is very important to this sample's identity (M = 5.40, out of a possible 7.0, SD = .74), while the work role is moderately important (M = 3.76, SD = 3.76). Family satisfaction was high (M = 5.00, SD = .56) and work satisfaction was moderate (M = 3.59, SD = .39). The polychronicity scores (M = 4.21, SD = 1.25) indicate that the participants were more polychronic than monochronic, however, there was a large amount of variability in scoring. There was also a large amount of variability in experienced work-unit polychronicity scores (M= 4.94, SD = 1.21), with individual's work-unit tending to have a focus on polychronic behavior. Participants experienced a moderate amount of family-work conflict (M = 4.00, SD = 1.20) and work-family conflict (M = 3.45, SD = 1.55).

The descriptive statistics for the ESM variables indicate that participants in this study reported high levels goal progress on their main activity (M = 4.00, SD = .91), and a moderate amount of vitality (M = 3.42, SD = 1.35). Interestingly, while average positive affect scores indicate that individuals experienced a moderate amount of positive affect (M = 3.38, SD = 1.10), negative affect scores were very low (M = .52, SD = .86). The end-of-day responses indicate that participants experienced very little work-family conflict (M = 1.63, SD = 1.10) and family-work conflict (M = 1.90, SD = 1.23). Overall, individuals felt that they made a moderate amount of progress on family goals (M = 4.12,

SD = 1.74) and on work goals (M = 3.84, SD = 2.04). Individuals tended to have moderate levels of vitality (M = 3.76, SD = 1.25).

Overall, this group of individuals values their family role and is highly satisfied with their family life. The work role appears to be moderately important to their self-identity. Their level of work satisfaction ranged from moderate (survey measures) to high (end-of-day measures). Interestingly, on the global survey measures of work-family conflict and family-work conflict, participants perceived that they had moderate levels of inter-role conflict, however, on a day-to-day basis, reported conflict levels were low. Participants may have had increased awareness of their experiences when participating in the diary portion of the study. Their level of conflict may have been evaluated differently based on their observed experiences throughout the day. These individuals keep their family role and work role separate from one another (which may be why they experience such low levels of daily conflict). Another possible explanation for the discrepancy in global ratings of inter-role conflict and daily levels of conflict may be that the psychological experience of conflict may differ at differing levels of measurement. When participants are asked to rate global conflict, they are summarizing experiences over an undisclosed period of time. Negative events may stand out more in long-term memory, while end-of-day reports may reflect the range of experienced events more accurately. Participants reported extremely low levels of negative affect, while positive affect and vitality levels were moderate. Perceived goal progress, when asked about overall family or work goals, was moderate. Perceived goal progress on a main activity was high.

Table 2

Descriptive Statistics

Survey Measures

Scale Score	M	SD
Family Centrality	5.40	.74
Work Centrality	3.76	.87
Polychronicity	4.21	1.25
Experienced Work-Unit Polychronicity	4.94	1.21
Family Satisfaction	5.00	.56
Work Satisfaction	3.59	.39
Work-Family Conflict	3.45	1.55
Family-Work Conflict	4.00	1.20

ESM Measures

Scale Score	M	SD
Main Activity Goal Progress	4.00	.91
Vitality	3.42	1.35
Negative Affect	.52	.86
Positive Affect	3.38	1.10

End-of-day Measures

Scale Score	M	SD
Family Goal Progress	4.12	1.74
Work Goal Progress	3.84	2.04
Work-Family Juggling	2.44	1.72
Work-Family Separation	5.16	1.96
Work-Family Conflict	1.63	1.10
Family-Work Conflict	1.90	1.23
Family Satisfaction	5.51	1.11
Work Satisfaction	4.77	1.42
Vitality	3.76	1.25

Table 3 presents the correlations among the survey variables of interest. Family centrality was negatively correlated with work centrality(r = -.32, p < .05), positively related to family satisfaction (r = .56, p < .01), and negatively related with work conflicting with family (r = -.39, p < .01). These relationships indicate that individuals high in family centrality were low in work centrality, found their family life satisfying, and felt that work didn't interfere with their family life. On the other hand, work centrality was positively related to work conflicting with family (r = .33, p < .05). Work centrality was negatively related to family satisfaction (r = -.27, p < .05) and positively related to work satisfaction (r = .39, p < .01). These relationships indicate that individuals who were high in work centrality tended to have low family centrality and low satisfaction with their family life, perceived that work interfered with family, but their work life was perceived as satisfying. Polychronicity was positively related to experienced work-unit polychronicity (r = .31, p < .05). The causal order of this relationship cannot be determined, so it not possible to say if polychronic individuals are attracted to more polychronic work environments or if individuals become more polychronic in order to meet the expectations of their workplace. Both polychronicity and experienced work-unit polychronicity were positively related to family conflicting with work (r = .38, p < .01 and r = .39, p < .01, respectively). Experienced work-unit polychronicity is the extent to which your workplace expects workers to juggle more than one work task, possibly indicating a more demanding work environment that requires more devotion to one's work role than their family role.

Table 3

Correlations among Survey Variables

Variables	1	2	3	4	5	6	7	8
1. Family Centrality (FC)	1.00							
2. Work Centrality (WC)	-.32*	1.00						
3. Polychronicity (POLY)	-.14	-.11	1.00					
4. Experienced Work-Unit Polychronicity (EWUP)	.20	-.16	.31*	1.00				
5. Family Satisfaction (FS)	.56**	-.27*	.01	-.03	1.00			
6. Work Satisfaction (WS)	.10	.39**	-.06	.11	-.15	1.00		
7. W-F Conflict (WFC)	-.39**	.33*	.15	-.06	-.20	.01	1.00	
8. F-W Conflict (FWC)	.20	.02	.38**	.39**	-.11	.16	.13	1.00

*$p < .05$
**$p < .01$

Interruption Occurrence

It is important to note that inter-role interruptions had an extremely low base rate in the current study. Family was reported as interrupting work on only 45 out of the total 2523 occasions, while work was reported as interrupting family on only 8 occasions. Family-work interruptions were spread evenly (1-3 interruptions) over 24 (16 females, 8 males) of the 52 participants. Thus, a little more than half of the participants did not report a single instance of family-work interruptions. Work-family interruptions were spread evenly over 8 participants (1 interruption per person: 5 females, 3 males) of the 52 participants.

Due to the low base rate of inter-role interruptions (8% of all interruptions), all relationships involving interruptions primarily refer to intra-role interruptions (92% of all interruptions) and hypotheses regarding inter-role interruptions could not be tested. Table 4 presents the frequencies of interruption type and the nature of the interruptions.

Table 4

Breakdown of Type of Interruptions and Nature of Interruption

Category	% of interruptions	% of responses
Intrarole		
Work tasks only	44.4	11.9
Family tasks only	12.9	3.5
Interrole		
Work interrupts family	1.0	.3
Family interrupts work	6.7	1.8
Other	35.0	9.3
Nature of Interruption		
Family domain		
Phone call/pager/etc.	8.6	2.2
Person interrupted you	9.8	2.6
E-mail	0.0	0.0
Work domain		
Phone call/pager/etc.	26.2	6.9
Person interrupted you	27.9	7.5
E-mail	4.2	1.1
Other domains		
Phone call/pager/etc.	8.5	2.2
Person interrupted you	13.8	3.7
E-mail	1.0	.2
Average number of daily interruptions	1.86	
Family interrupts family	.24	
Work interrupts work	.80	
Other	.82	
Phone call/pager/etc.	.80	
Person interrupts you	.96	
E-mail	.10	

Relationship between Interruption Occurrence and Immediate Experience Measures of Goal Progress, Task Demands, Affect, and Vitality

A preliminary investigation of the relationships between interruption and some of the major outcome variables of interest at the immediate level of experience was conducted. This was done to provide insight into how interruptions influence the experiences of multiple role occupants. Pooled time-series analysis was utilized, with scores on the outcome variable being regressed on N-1 subject vectors (step 1), and a dummy-coded interruption contrast (interruption (1) vs. no interruption (0), step 2).

Interruptions and goal progress. Between-subjects variability (captured by the N-1 subject vectors entered at step 1 of the analysis) accounted for 24% of the variance in goal progress scores. The interruption contrast significantly contributed to the amount of variance accounted for (R^2 change = 1%). The occurrence of an interruption significantly decreased goal progress perceptions (b = -.08, $p < .01$).

Interruptions and main task demands. The relationship between the occurrence of an interruption and the perceived task demands associated with the main task was examined. Between-subjects variability accounted for 17% of the variance in task demand perceptions. The addition of the interruption contrast at step 2 contributed to a significant additional percentage of variance accounted for (R^2 change = 2%). Interruptions were a significant, positive predictor of perceived task demands (b = .15, $p < .01$). This indicated that individuals perceived their main activity as being more demanding when an interruption had occurred than when no interruption had occurred.

Interruptions and affect. Between-subjects variability accounted for 21% of the variance in negative affect scores. At step 2, the interruption contrast contributed a significant amount of explained variance (R^2 change = 1%) and was a positive,

significant predictor of negative affect (b = .12, p < .01). This indicated that individuals reported more negative affect when an interruption occurred than when an interruption did not occur.

Between-subjects variability accounted for 43% of the variance in positive affect scores. The interruption contrast contributed a significantly to the amount of variance accounted for (R^2 change = .2%). Individuals experienced significantly less positive affect when an interruption occurred than when an interruption did not occur (b = -.05, p < .01). However, the variance accounted for by interruptions was extremely small, calling into question the importance of this finding.

Interruptions and vitality. Forty-two percent of the variability in vitality scores was due to between-subjects differences. Interruptions did not account for a significant change in the variance accounted for, nor was it a significant predictor of vitality (b = -.02, p = .30)

Overall, the participants of this study experienced more negative outcomes when an interruption occurred than when no interruption had occurred. Their perceived goal progress on the main activity was lower, while the perceived task demands were higher. The participants experienced greater negative affect and less positive affect when an interruption occurred. These analyses suggest that interruptions influenced the experiences of these participants throughout the day.

Family-work interruptions were spread evenly (1-3 interruptions) over 24 participants (16 females, 8 males). Work-family interruptions were spread evenly over 8 participants (1 interruption per person; 5 females, 3 males).

Relationship between Relative Task Demands and Behavioral Strategy.

To test Hypotheses 1a – 1c regarding the behavioral strategies used in response to interruptions, a difference score was computed comparing the demands of the current task to those of the interruption. These difference scores were used to categorize each incident in one of three levels of relative task demands: (1) the current task was associated with greater task demands; (2) interruption was associated with greater task demands; (3) the current task and interruption were associated with equivalent task demands. The dependent variable was behavioral strategy, which also has three levels: (1) sequential processing; (2) pre-emption; (3) simultaneity. A chi-square analysis was utilized to determine if the strategy used was dependent upon the relative demands of the tasks. Table 5 presents the observed frequencies of strategies in each of the relative task demand conditions. The overall chi-square statistic was significant, χ^2 (4) = 174.97, $p <$ .01, indicating the strategy was related to task demands. Pre-emption and simultaneity were both found to occur at significantly higher rates than chance, while sequential processing occurred at a lower rate than chance, when considered over all relative task demand conditions

Higher current task demands and sequential processing. A chi-square test was applied to test the hypothesis (Hypothesis #1a) that if one's current task was associated with greater task demands than the interrupting task, the individual would be more likely to engage in sequential behavioral strategies than preemptive and simultaneous strategies. The relationship between task demands and behavioral strategy was found to be significant, χ^2 (2, N = 345) = 81.46, $p < .01$. The hypothesis was not supported, however, as individuals were more likely to engage in preemption and simultaneity than expected, and less likely to engage in sequential processing than expected. Table 5 presents the

observed frequencies for the three cells, in the "Main activity: higher demands" row, row 1.

Higher interrupting task demands and pre-emption. Hypothesis #1b predicted that if the demands associated with the interrupting task were greater than the demands associated with the individual's current task, the individual would be more likely to engage in pre-emptive behavioral strategies than sequential or simultaneous behavioral strategies. A chi-square analysis found the relationship between task demands and behavioral strategy to be significant, χ^2 (2, N = 135) = 64.18, $p < .01$. Table 5 presents the observed frequencies for these cells, in the "Interruption: higher demands" row, row 2. The hypothesis was supported, as individuals engaged in pre-emptive behavioral strategies more than expected and sequential processing and simultaneity less than expected by chance.

Simultaneity and equivalent task demands. In order to test Hypothesis #1c, which predicted that individuals would be more likely to use simultaneous behavioral strategies when the demands of the current task and the interrupting task were approximately equal than when the demands of one of the tasks was stronger than the demands of the other test, a chi-square test was conducted. A significant relationship between task demands and simultaneity was found, χ^2 (2, N = 214) = 110.53, $p < .01$. The hypothesis was not supported, as individuals were more likely to engage in simultaneity when the main task was more demanding than expected and less likely to engage in simultaneity than expected when task demands were equivalent and when the interrupting task had higher task demands. Table 5 ("Simultaneity" column) presents the observed frequencies for these cells.

Table 5

Observed Frequencies of Engagement in Behavioral Strategies

Task demands	*Seq Proc*	*Pre-emption*	*Simultaneity*	*Total*
Main activity > Interruption	37	165	143	345
Interruption > Main Activity	7	83	45	135
Equivalent	7	58	26	91

Moderating influence of role centrality on relationship between task demands and behavioral strategy. Due to the low base rate of incidents of work interrupting family (N = 8) and family interrupting work (N = 45), I was unable to test Hypotheses #2a – 2b, which predicted an interaction between relative task demands and role centrality when work interrupted family and family interrupted work.

Polychronicity and Behavioral Strategy.

Trait polychronicity and simultaneity. To test the hypothesis (Hypothesis #3) that trait polychronicity is positively related to simultaneous strategies, polychronicity scores were correlated with aggregated relative frequency scores for the 3 types of behavior strategies. The correlation between polychronicity scores and simultaneity, while positive, was not significant, $r(51) = .13$, $p > .37$. Polychronicity and sequential processing were not significantly related, $r(51) = -.02$, $p > .89$. A marginally significant correlation between pre-emption and polychronicity was found, $r(51) = .24$, $p < .10$. These results do not support the hypothesis.

Experienced work-unit polychronicity and simultaneity in the workplace. The hypothesized positive relationship between experienced work-unit polychronicity and simultaneity (Hypothesis 4) was be tested by correlating experienced work-unit polychronicity scores and aggregated relative frequency scores for the 3 types of behavioral strategies in the workplace. The hypothesis was not supported, as the relationship between experienced work-unit polychronicity and simultaneity was not significant, $r(48) = .213$, $p > .14$. A marginally significant, negative relationship was found between experienced work-unit polychronicity and sequential processing, $r(48) = .-.245$, $p < .10$. The relationship between pre-emption and experienced work-unit polychronicity was not significant, $r(48) = .082$, $p > .57$.

Behavioral Strategy and ESM Goal Progress

Pooled time-series analysis was used to test Hypotheses #5a and #5b. Hypothesis #5a stated that sequential processing strategies would be positively related to perceptions of goal progress in the current task. Hypothesis #5b stated that pre-emptive behavioral strategies would be negatively related to perceptions of goal progress in the current task. In order to test these hypotheses, dummy coded variables were created to test the effects of behavioral strategy. The comparison group was altered for to test the specific contrast specified in each hypothesis. Goal progress perceptions were regressed on N – 1 subject vectors (step 1) and the behavioral strategy dummy variables (step 2). Table 6 presents the results of the analyses, which did not support Hypothesis #5a or Hypothesis #5b.

For Hypothesis #5a, goal progress perceptions were regressed on N –1 subject vectors (step 1) and behavioral strategy dummy variables (step 2). Sequential processing was designated as the comparison condition (coded 0 on both variables). Thus, these

variables test sequential processing vs. simultaneity and sequential processing vs. pre-emption. Between-subjects differences accounted for a moderately high proportion of variance in perceived goal progress, with 47% of the variance in goal progress perceptions due to individual differences. The behavioral strategy contrasts did not account for a significant change in the amount of variance explained and none of the regression coefficients for the contrasts were significant. Thus, Hypothesis #5a was not supported.

Hypothesis #5b was tested by regressing goal progress perceptions on N-1 subject vectors (step 1) and behavioral strategy dummy variables (step 2). Pre-emption was designated as the comparison condition (coded 0 on both variables). These variables test pre-emption vs. simultaneity and pre-emption vs. sequential processing. They did not explain additional variance in goal progress perceptions beyond that explained by between-subject differences (47%). Hypothesis #5b was not supported. Thus, the regression results in Table 6 show that the type of strategy that one used in response to an external interruption was not significantly related to one's perception of goal progress. Sequential processing did not result in higher perceived progress than the other strategies, nor did pre-emptive strategies result in lower perceived progress.

Table 6

Pooled Time-Series Analysis: Behavioral Strategies and Goal Progress Perceptions

Behavioral Contrast	β	t
Sequential vs. simultaneity	.08	1.21
Sequential vs. pre-emption	.06	.85
Pre-emption vs. simultaneity	.03	.85
Pre-emption vs. sequential	-.03	-.67

Behavioral Strategy, Number of Interruptions, and End-of-Day Goal Progress Perceptions

Hypothesis #6 related aggregated immediate experience measures to end-of-day perceptions. It was hypothesized that perceptions of end-of-day goal progress would be negatively related to the number of interruptions that occurred in a domain and the use of simultaneous and pre-emptive behavioral strategies. In order to test this hypothesis, separate pooled time-series analyses were conducted for the work domain and the family domain.

Work goal progress perceptions. For the work domain, end-of-day work goal progress perceptions were regressed on N-1 subject vectors (step 1) and daily aggregates of work interruptions (step 2). Individual differences accounted for 30% of the variance in work goal progress perceptions. Work interruptions accounted for a significant change in the amount of variance explained (R^2 change = 15%) and were a significant predictor of end-of-day work goal progress perceptions (b = .46, $p < .01$). Contrary to the predictions of Hypothesis #6, higher numbers of interruptions were associated with *greater* end-of-day feelings of work goal progress.

Additionally, end-of-day work goal progress perceptions were regressed on N-1 subject vectors and daily aggregates of engagement in pre-emption and simultaneity. Table 7 presents the results of this analysis. As mentioned previously, between-subjects variability accounted for 30% of the variance in work goal progress perceptions. The addition of the aggregated behavioral strategies at step 2 resulted in a significant change in the amount of variance accounted for (R^2 change = 15%). Both aggregated pre-emption (b = .34, $p < .01$) and aggregated simultaneity (b = .20, $p < .01$) were significant

predictors of end-of-day work goal progress perceptions. The relationships were not in the specified direction, with results indicating that higher frequency of engagement in pre-emption and simultaneity led to higher perceived work goal progress. Thus, Hypothesis #6 was not supported; instead it appears that perceived work progress at the end of the day is positively related to interruptions occurring during the day. These findings may reflect the fact that intra-role interruptions were the most frequently reported type of interruption. Individuals may have felt that they were accomplishing work-related goals even when interrupted because the task they were performing was a work task.

Table 7

Pooled Time-Series Analysis: Behavioral Strategies and Perceived Work Goal Progress

Predictors	β	t
Aggregated Interruptions	.62**	7.87
Pre-emption	.34**	5.57
Simultaneity	.20**	3.37

**$p < .01$

Family goal progress perceptions. Family end-of-day goal progress perceptions were regressed on N-1 subject vectors (step 1) and aggregated daily interruptions in the family role. Individual differences accounted for 31% of the variance in family goal progress perceptions. The addition of aggregated daily interruptions did not result in a significant change in the variance accounted for.

Additionally, family goal progress perceptions were regressed on N-1 subject vectors (step 1) and aggregated pre-emption and simultaneity in the family role (step 2). The addition of behavioral strategies did not account for a significant change beyond variance due to between-subjects differences. Hypothesis #6 was not supported. Table 8 presents the results of this analysis.

Table 8

Pooled Time-Series Analysis: Behavioral Strategies and Perceived Family Goal Progress

Predictors	β	t
Aggregated Interruptions	.11	1.81
Pre-emption	.07	1.04
Simultaneity	.10	1.45

Behavioral Strategy and Affect

Hypothesis #7 predicted that simultaneous processing strategies would be more strongly related to negative affect and more weakly related to positive affect than pre-emptive or sequential processing strategies. In order to test this hypothesis, pooled time series analyses were conducted, one analysis for negative affect and one analysis for positive affect. Affect was regressed on N-1 subject vectors (step 1), and behavioral strategy contrasts (simultaneity vs. pre-emption and simultaneity vs. sequential processing). Table 9 presents the results of the analyses.

Negative affect and behavioral strategy. Between-subjects variability accounted for a significant 66% of the total variance in negative affect scores. At step 2, behavioral

strategy did not account for additional variance and neither behavioral strategy contrast was a significant predictor of negative affect. Thus, Hypothesis #7 was not supported.

Positive affect and behavioral strategy. At step 1, between-subject differences accounted for 52% of the variability in positive affect scores. The behavioral contrasts did not add to the variance accounted for and neither behavioral strategy contrast was a significant predictor of positive affect. Hypothesis #7 was not supported.

To supplement these analyses, pooled time-series analysis was conducted to examine the relationship between end-of-day perceptions of juggling and separating work and family roles and end-of-day perceived work-family conflict and family-work conflict. While actual engagement in simultaneity did not lead to negative affect, perceptions of juggling more than one role, rather than juggling more than one task, may influence the amount of daily conflict an individual experiences (Williams & Alliger, 1994). This also allowed for an examination of how managing multiple roles affects multiple role occupants (the low base rate of inter-role interruptions did not permit examination of inter-role juggling throughout the day). Between-subjects variability accounted for 49% of the variance in reported work-family conflict scale scores. The addition of inter-role juggling and inter-role separation accounted for a significant change in the variance accounted for (R^2 change = 9%). Inter-role juggling was the only significant predictor of end-of-day work-family conflict ($b = .34$, $p < .01$). High levels of *perceived* inter-role juggling were associated with high levels of work-family conflict. When examining family-work conflict, 28% of the variability in scores was due to individual differences. Inter-role juggling and inter-role separation accounted for a 31% increase in the variance explained. Both perceived inter-role juggling and inter-role

separation were significant predictors of family-work conflict. Inter-role juggling was a significant, positive predictor (b = .57, p < .01) of end-of-day family-work conflict and inter-role separation was a significant, negative predictor (b = -.23, p < .01) of end-of-day family-work conflict. The more separate work and family roles were, the less individuals perceived the roles as interfering with one another.

Table 9

Pooled Time-Series Analysis: Behavioral Strategies and Affect

Behavioral Strategy	*Negative affect*		*Positive affect*	
	β	t	β	t
Simultaneity vs. Pre-emption	-.03	-.64	.02	.38
Simultaneity vs. Sequential Processing	.03	.70	.02	.42

Goal Progress and Affect

Although the hypothesized relations between interruptions, behavioral strategies and goal progress were not supported, I conducted additional analyses to examine the relation between goal progress and affect. Figure 1 identifies goal progress as a critical determinant of role satisfaction and affect and thus these analyses are germane to the objectives of this study. Hierarchical linear modeling was used to analyze the relationship between goal progress perceptions and positive affect and negative affect. Hierarchical linear modeling was not used to analyze relationships previously because the number of responses for the variables of interest did not allow for robust analyses. Task demands were explored as a predictor of affect and vitality as well, as they have been found to play a role in affective reactions. Task demands (both family- and work-related)

have been found to be positively related to distress (Bolger, DeLongis, Kessler, & Schilling, 1989; Williams & Alliger, 1994) and anxiety (Fox, Dwyer, & Ganster, 1993). Table 10 presents the HLM coefficients relevant to family goal progress and family-related affect, and Table 11 presents the HLM coefficients relevant to work goal progress and work-related affect.

Family Goal Progress and Affect

Hypotheses #8a and #9a predicted that perceived goal progress in the family domain would be negatively related to negative affect and positively related to positive affect (Hypothesis #8a) and that those relationships would be strengthened by family centrality (Hypothesis #9a). The following analyses test the specified relationships, as well as the relationship between task demands and affect as moderated by family centrality. Figure 2 presents the path coefficients for the relationship between family task demands and affect. Figure 3 presents the path coefficients for the relationship between family goal progress and affect.

Negative affect in the family domain. The grand mean of negative affect in the family domain was .52, indicating that participants experienced low levels of negative affect in the family domain. Of the total variance in negative affect, 60% was attributable to within-subjects variance and 30% to between-subjects variance. The chi-square test indicated that there was a significant amount of between-subjects variance, χ^2 (50) = 318.04, $p < .01$, allowing the examination of Hypotheses #8a, which explored the relationship between negative affect and goal progress. The intra-class correlation (ICC)

for the negative affect scale was .33, indicating that 33% of the variance in negative affect scores was between-subjects variance.

Task demands associated with the main task were found to be a significant predictor of negative affect, $\gamma_{10} = .15$, $t(49) = 2.96$, $p < .01$. The positive parameter indicated that as task demands increased, negative affect increased. Goal progress associated with the main task was found to be a significant predictor of negative affect, $\gamma_{20} = -.24$, $t(49) = -4.2$, $p < .01$. The negative parameter indicates that as goal progress increased, negative affect decreased, which supports Hypothesis #8a.

Family centrality was not a significant predictor of between-subjects variance in negative affect, $\gamma_{01} = -.10$, $t(49) = -.84$, $p = .41$. Family centrality did not moderate the relationship between task demands and negative affect, $\gamma_{11} = -.04$, $t(49) = -.61$, $p = .54$. Chi-square analysis indicated there was a significant amount of unexplained between-subject variance, $\gamma_{11} = .07$, $\chi^2(42) = 87.45$, $p < .01$.This suggests that other moderators of the relationship between task demands in the family domain and negative affect may exist.

Family centrality was not found to moderate the relationship between goal progress and negative affect, thus failing to support Hypothesis #9a, $\gamma_{21} = .08$, $t(49) = 1.24$, $p = .22$. Chi-square analysis indicated that significant between-subjects variance remained to be explained, $\gamma_{21} = .06$, $\chi^2(42) = 99.02$, $p < .01$.

Positive affect in the family domain. The grand mean of positive affect in the family domain was 3.50, indicating that participants experienced moderate levels of positive affect when in the family domain. Within-subject variance in positive affect was .73 and between-subject variance in positive affect was .53. Chi-square analysis

indicated that there was significant variance between-subjects, χ^2 (50) = 484.10, $p < .01$, which allowed for Hypothesis #8a to be tested. The ICC was .42, indicating that 42% of variance in positive affect resides between-subjects.

Task demands associated with the main task were not found to be predictor of positive affect, $\gamma_{10} = .02$, $t(49) = .62$, $p = .54$. Goal progress perceptions were found to be significant predictor of positive affect, with $\gamma_{20} = .22$, $t(49) = 4.52$, $p < .01$. The positive parameter indicated that as goal progress increased, positive affect increased, supporting Hypothesis #8a.

Family centrality was a significant predictor of positive affect, $\gamma_{01} = .37$, $t(49) = 2.70$, $p < .01$. The positive parameter indicated that as family centrality increased, positive affect increased. Family centrality did not moderate the relationship between task demands and positive affect, $\gamma_{11} = -.07$, $t(49) = -1.41$, $p = .16$.

Family centrality was not found to be a significant moderator of the relationship between family goal progress perceptions and positive affect, $\gamma_{21} = .05$, $t(49) = .85$, $p = .40$. Chi-square analysis indicated that there was not a significant amount of between-subject variance in positive affect to be predicted, $\gamma_{21} = .01$, χ^2 (44) = 39.95, $p > .50$.

Table 10

Results of Hierarchical Linear Modeling: Goal Progress and Affective Outcomes in the Family Domain

Fixed effects	*Coefficient*	*Standard error*
Model for negative affect		
Intercept, β_0		
Intercept 2, γ_{00}	.53**	.09
Family centrality, γ_{01}	-.10	.11
Main task demands, β_1		
Intercept 2, γ_{10}	.15**	.05
Family centrality, γ_{11}	-.04	.06
Goal progress perceptions, β_2		
Intercept 2, γ_{20}	-.24**	.06
Family centrality, γ_{21}	.09	.07
Model for positive affect		
Intercept, β_0		
Intercept 2, γ_{00}	3.50**	.10
Family centrality, γ_{01}	.37**	.14
Main task demands, β_1		
Intercept 2, γ_{10}	.02	.04
Family centrality, γ_{11}	-.07	.05
Goal progress perceptions, β_2		
Intercept 2, γ_{20}	.22**	.05
Family centrality, γ_{21}	.05	.06

*$p < .05$
**$p < .01$

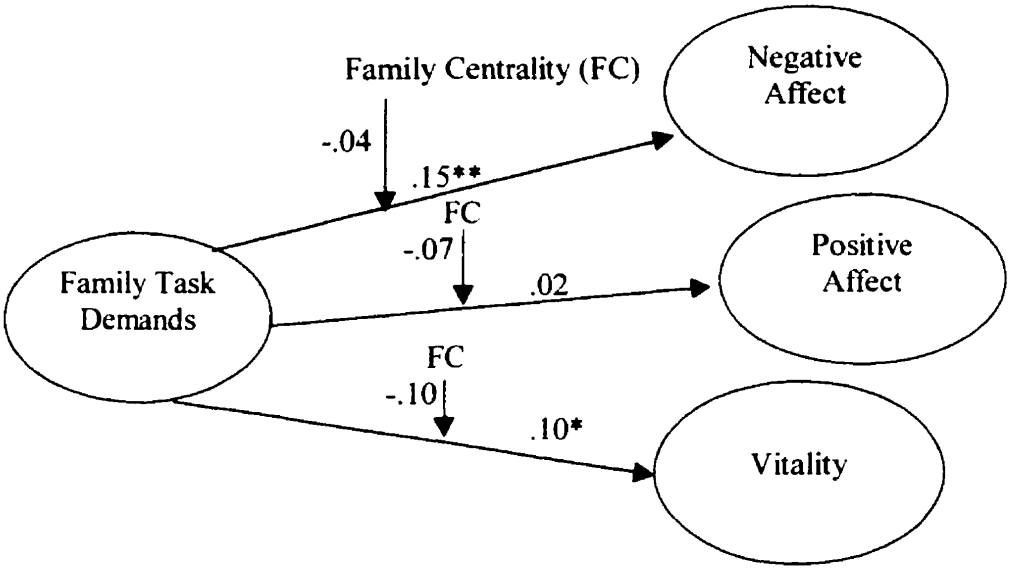

Figure 2. Path Coefficients: ESM Family Task Demands and ESM Negative Affect, Positive Affect, and Vitality.

*$p < .05$
**$p < .01$

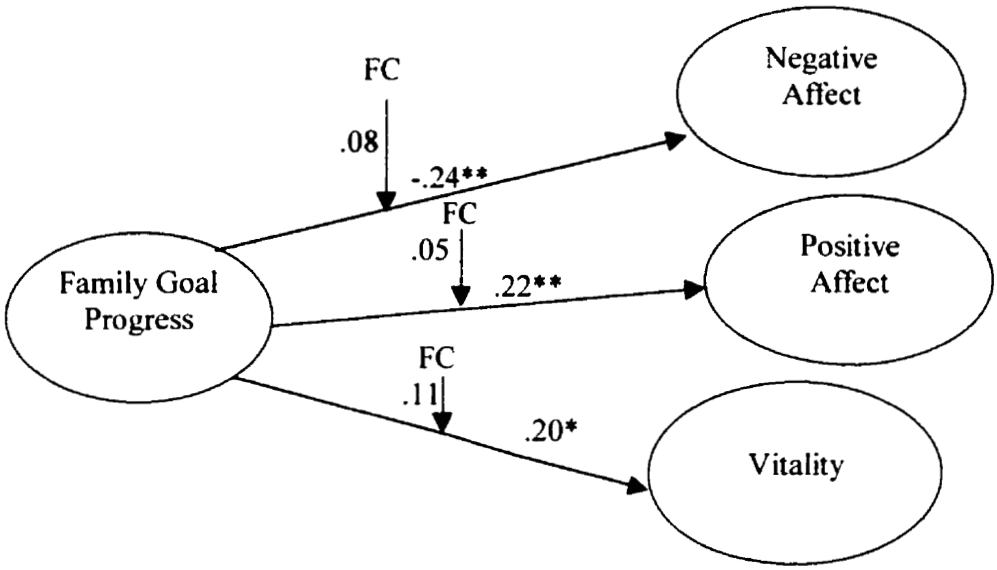

Figure 3. Path Coefficients: ESM Family Goal Progress and ESM Negative Affect, Positive Affect, and Vitality.

Work Goal Progress and Affect

Hypotheses #8b and #9b predicted that perceived goal progress in the work domain would be negatively related to negative affect and positively related to positive affect (Hypothesis #8a) and that those relationships would be strengthened by work centrality (Hypothesis #9a). The following analyses test the specified relationships, as well as the relationship between task demands and affect as moderated by family centrality. Table 11 presents the results of this analysis. Figure 4 presents the relationship between work task demands and affect and Figure 5 presents the relationship between work goal progress and affect.

Negative affect in the work domain. The grand mean of negative affect in the work domain was .59, indicating that individuals had very low levels of negative affect when in the work domain. The within-individual variance on the negative affectivity scale was .52, the between-subject variance was .21. The chi-square test indicated that the variance between-subjects was significant, χ^2 (51) = 384.86, $p < .01$. This allowed for examination of the relationship between goal progress in the work domain and negative affect specified in Hypotheses #8b. The intra-class correlation (ICC) was .29, indicating that 29% of the variance in negative affect in the work domain resides between individuals.

Task demands associated with the main task were found to be a significant predictor of negative affect, $\gamma_{10} = .12$, $t(50) = 3.50$, $p < .01$. The positive parameter estimate indicates that as the task demands associated with the main task increased, negative affect increased. Perceived goal progress associated with a work task was found to be a significant predictor of negative affect, $\gamma_{20} = -.24$, $t(50) = -4.97$, $p < .01$. This

supports Hypothesis #8b, as the negative parameter indicates that as goal progress associated with a work task increases, negative affect decreases.

Work centrality was not a significant predictor of between-subject variability in negative affect, $\gamma_{01} = .09$, $t(50) = 1.20$, $p = .24$. Work centrality was not found to be a significant moderator of the relationship between task demands in the work domain and negative affect, $\gamma_{11} = -.04$, $t(50) = -1.10$, $p = .28$. The chi-square analysis of the between-subject variance left to be explained was significant, suggesting that there is a significant amount of variance to be explained, $\chi^2 (46) = 83.90$, $p < .01$.

Work centrality was not a significant moderator of the relationship between work goal progress and negative affect, $\gamma_{21} = .07$, $t(50) = 1.29$, $p = .20$. Thus Hypothesis #9b, which predicted that work centrality would strengthen the relationship between work goal progress and negative affect, was not supported. The chi-square analysis of the variance left to be explained in the relationship between goal progress and negative affect suggested that there was a significant amount of variance left to be explained, $\gamma_{21} = .06$, $\chi^2 (46) = 95$, $p < .01$. This suggests additional moderators of the relationship between goal progress in the work domain and negative affect should be considered.

Positive affect in the work domain. The grand mean of positive affect in the work domain was 3.22, indicating that individuals experienced a moderate amount of positive affect when at work. The within-individuals variance on positive affect scale was .50, the between-subjects variance in positive affect was .61. The chi-square test indicated that this between-subjects variance was significant, $\chi^2 (51) = 1076.01$, $p < .01$. Sufficient variance between-subjects allowed for Hypotheses #8b, which stated that goal progress in the work domain would be positively related to positive affect, to be tested. The ICC for

the positive affect measure was .55, indicating that 55% of the variance in positive affect scores resides between individuals.

Task demands associated with the main task were not found to be a significant predictor of positive affect, γ_{10} = .05; t (50) = 1.5, p = .14. Goal progress on work tasks was found to be a significant predictor of positive affect, γ_{20} = .17, t (50) = 4.11, p < .01. This positive parameter supports Hypothesis #8b, which predicted that goal progress would be positively related to positive affect.

Work centrality was not a significant predictor of the between-subject variance in positive affect, γ_{01} = -.01; t (50) = -.08, p = .94. Work centrality did not moderate the relationship between task demands and positive affect, γ_{11} = -.01, t (50) = -.28, p = .78.

Work centrality did not moderate the relationship between goal progress and positive affect, γ_{21} = .03, t (50) = .66, p = .51. Thus, Hypothesis #9b, which had predicted that work centrality would strengthen the relationship between goal progress and positive affect, was not supported. The chi-square test of the remaining variance in the slope term indicated that a significant amount of variance remained, γ_{21} = .03, χ^2 (47) = 72.66, p < .01. The remaining variance in the slope term suggests that other moderators of the relationship between work goal progress and positive affect in the work domain remain.

Table 11

Results of Hierarchical Linear Modeling: Goal Progress and Affective Outcomes in the Work Domain

Fixed effects	*Coefficient*	*Standard error*
Model for negative affect		
Intercept, β_0		
Intercept 2, γ_{00}	.59**	.07
Work centrality, γ_{01}	.09	.08
Main task demands, β_1		
Intercept 2, γ_{10}	.12**	.03
Work centrality, γ_{11}	-.04	.04
Goal progress perceptions, β_2		
Intercept 2, γ_{20}	-.24**	.05
Work centrality, γ_{21}	.07	.06
Model for positive affect		
Intercept, β_0		
Intercept 2, γ_{00}	3.21**	.11
Work centrality, γ_{01}	-.01	.13
Main task demands, β_1		
Intercept 2, γ_{10}	.05	.03
Work centrality, γ_{11}	-.01	.04
Goal progress perceptions, β_2		
Intercept 2, γ_{20}	.17**	.04
Work centrality, γ_{21}	.03	.05

*$p < .05$
**$p < .01$

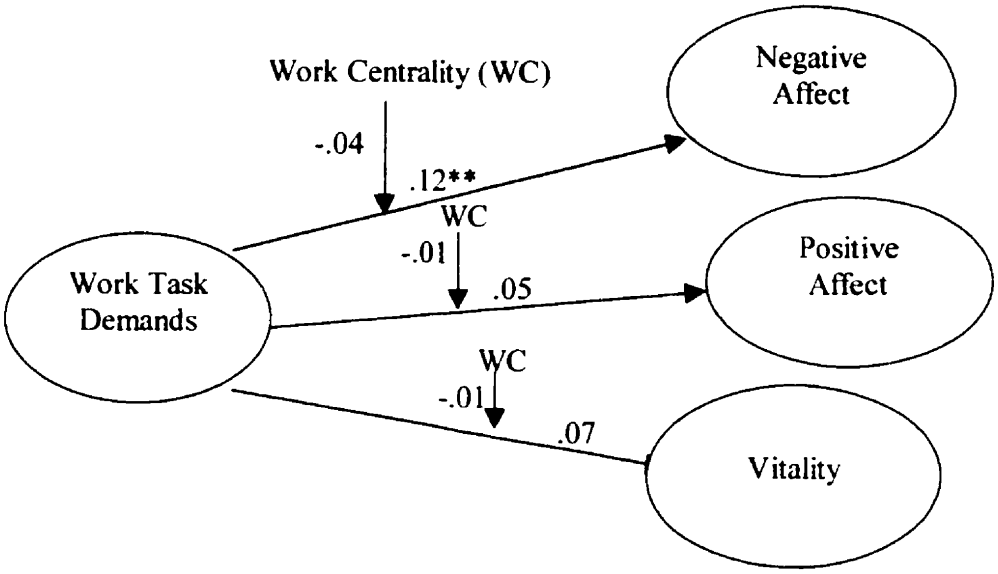

Figure 4. Path Coefficients: ESM Task Demands and Negative Affect, Positive Affect, and Vitality.

**p < .01

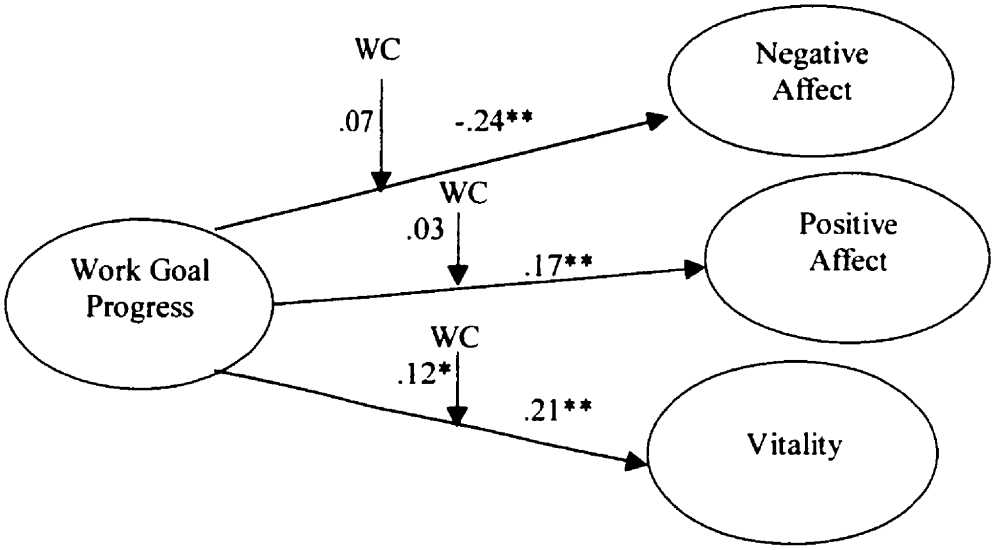

Figure 5. Path Coefficients: ESM Work Goal Progress and Negative Affect, Positive Affect, and Vitality.

*p < .05
**p < .01

Perceived Goal Progress and Satisfaction

Pooled time-series analysis was used to test Hypotheses #10a, #10b, #11a, and #11b. Table 12 presents the results of these analyses. Separate analyses were used to test Hypotheses #10a and #11a and Hypotheses #10b and #11b. Hypotheses #10a and #11a proposed a positive relationship between end-of-day family goal progress and end-of-day family satisfaction, moderated by family centrality and Hypotheses #10b and #11b proposed a positive relationship between end-of-day work goal progress and end-of-day work satisfaction, moderated by work centrality.

In order to test Hypotheses #10a and #11a, end-of-day family satisfaction scores were regressed on N-1 subject vectors (step 1), end-of-day family goal progress perceptions (step 2), and a family goal progress X family centrality cross-product term (step 3). Table 12 and Figure 6 present the results of this analysis, which provide support for Hypothesis #10a, but do not support Hypothesis #11a. Individual differences accounted for 49% of the variance in family satisfaction scores, a moderately high amount of variance. At step 2, family goal progress accounted for a significant change in the amount of variance accounted for (R^2 change = 6%) and was found to be a significant, positive predictor of family satisfaction (b = .31, $p < .01$). This finding supports Hypothesis #10a. At step 3, the interaction between family goal progress and family centrality did not contribute significantly to the variance explained and was not a significant predictor of family satisfaction. This finding did not support Hypothesis #11a.

Hypotheses #10b and #11b were tested by regressing work satisfaction scores on N-1 subject vectors (step 1), end-of-day work goal progress perceptions (step 2), and a work goal progress X work centrality cross-product term (step 3). A moderately high

amount of the variance in work satisfaction was due to individual differences (50%). At step 2, work goal progress perceptions accounted for a significant increase in the amount of variance accounted for (R^2 change = 13%) and was a positive, significant predictor of work satisfaction (b = .43, $p < .01$). This finding supports Hypothesis #10b. Work centrality was not found to exert a moderating influence at step 3, as it did not contribute to the variance accounted for and was not a significant predictor of work satisfaction. Thus Hypothesis #11b was not supported. Table 12 and Figure 7 present the results of this analysis.

Table 12

Results of Pooled time-series analysis: Goal Progress and Satisfaction

	Family Satisfaction			*Work Satisfaction*		
Variables	*1*	*2*	*3*	*1*	*2*	*3*
Family goal progress (FGP)		.31**	.39			
FGP X Family Centrality			-.09			
Work goal progress (WGP)					.43**	.84**
WGP X Work Centrality						-.47
R^2	.57**	.63**	.63**	.50**	.63**	.63**
ΔR^2		.06**	.00		.13**	.00
ΔF		48.91**	.05		81.35**	3.10

**$p < .01$

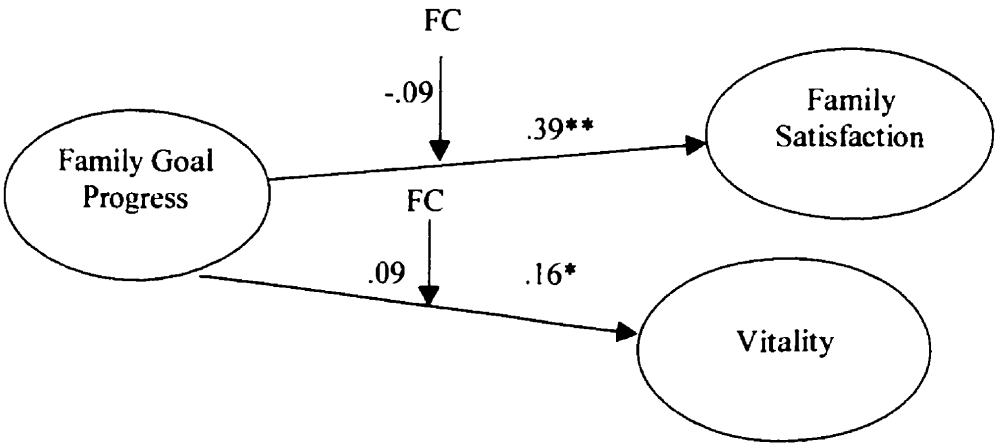

Figure 6. Path coefficients: EOD Family Goal Progress and Family Satisfaction and Vitality.

*p < .05
**p < .01

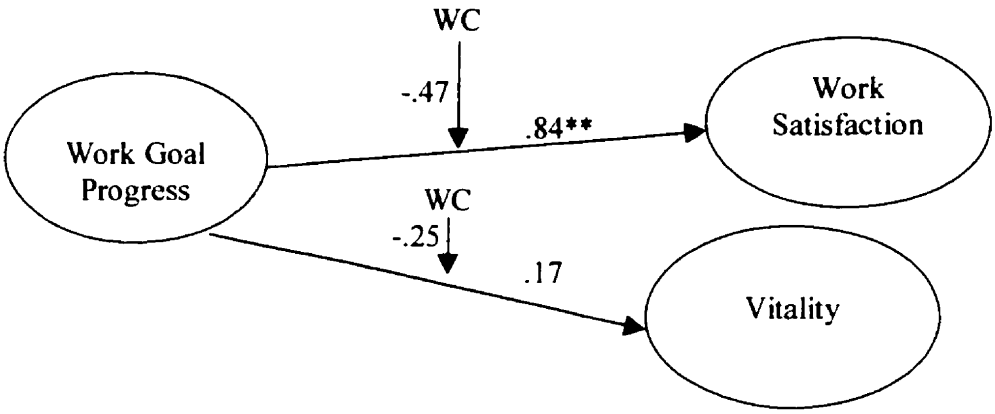

Figure 7. Path coefficients: EOD Work Goal Progress and Work Satisfaction and Vitality.

**$p < .01$

Vitality and Behavioral Strategy

Hypotheses #12a, #12b, #13a, and #13b, which examined the relationship between behavior strategy and vitality as a function of role centrality when inter-role interruption occurs, could not be tested due to the extremely low base rate of inter-role interruptions. The total number of inter-role interruptions was 53 (45 incidents of family interrupting work, 8 incidents of work interrupting family).

Vitality and Goal Progress

Hypothesis #14 predicted that goal progress would be positively related to vitality. Hypotheses #15a-15b stated that role centrality would moderate that relationship. HLM analyses were conducted to examine the relationship between ESM measures of goal progress and vitality in the family domain and in the work domain and the moderating influence of role centrality. Additionally, the relationship between task demands and vitality was tested. This relationship was tested to help clarify conflicting findings regarding the influence of task demands on fatigue. Fox, Dwyer, & Ganster (1993) found task demands to be positively related to fatigue, while Williams & Alliger (1994) found task demands to be negatively related to fatigue. It was hoped that these analysis would help clarify the role of task demands in determining individual's energy level. Table 13 presents the HLM results relevant to the family and work domains, Figures 2 and 3 present the HLM results relevant to the family domain, and Figures 4 and 5 present the HLM results relevant to the work domain.

ESM vitality in the family domain. The grand mean of vitality at home was 3.49, indicating that participants experienced moderate levels of vitality while in the family domain. Within-subject variance was 1.00, between-subject variance in vitality scores

was .86. The chi-square analysis indicated that there was significant between-subjects variance in vitality scores, χ^2 (50) = 562.22, $p < .01$. The ICC was .46, indicating that 46% of the variance in vitality scores is between-subjects.

Task demands were a significant predictor of vitality, γ_{10} = .10, t(49) = 2.01, $p <$ .05. The positive parameter indicated that as demands went up, vitality scores went up. Goal progress was a significant predictor of vitality, γ_{20} = .20, t(49) = 2.62, $p < .05$. The positive parameter supported Hypothesis #14, indicating that as goal progress increased, vitality increased.

Family centrality was not a significant predictor of between-subjects variance in vitality scores, γ_{01} = .32, t(49) = 1.79, $p = .08$. Family centrality was not a significant moderator of the relationship between task demands and vitality, γ_{11} = -.10, t(49) = -1.59, $p = .12$. Chi-square analysis indicated that there was not a significant amount of between-subject variance left unexplained, χ^2 (43) = 42.73, $p > .50$.

Family centrality did not moderate the relationship between goal progress and vitality, γ_{21} = .11, t(49) = 1.17, $p = .25$. Thus, Hypothesis #15a was not supported. Chi-square analysis indicated that there was not a significant amount of between-subject variance to be explained in the goal progress-vitality relationship, γ_{21} = .07, χ^2 (43) = 51.27, $p = .18$.

ESM vitality in the work domain. The grand mean of vitality in the work domain was 3.39, indicating that individuals experienced a moderate level of vitality while at work. The within-subject variance on the vitality measure was .76, while between-subject variance was .98. The chi-square test indicated the between-subject variance was significant, χ^2 (51) = 1134.64, $p < .01$. The significant between-subject variance allowed

for Hypotheses #14 to be tested. The ICC was .56, indicating 56% of the variance in vitality scores resides between individuals. Task demands associated with the main task were not found to be a significant predictor of vitality, $\gamma_{10} = .07$, $t(50) = 1.89$, $p = .07$. Goal progress was found to be a significant predictor of vitality, $\gamma_{20} = .21$, $t(50) = 4.26$, $p < .01$. The positive parameter supports Hypothesis #14, which stated that goal progress would be positively related to vitality.

Work centrality was not a significant predictor of the between-subjects variability in vitality. $\gamma_{01} = -.01$, $t(50) = -.08$, $p = .93$. Work centrality was not found to moderate the relationship between task demands and vitality, $\gamma_{11} = -.01$, $t(50) = -.24$, $p = .81$.

Work centrality moderated the relationship between goal progress and vitality in the work domain, $\gamma_{21} = .12$, $t(50) = 1.98$, $p < .05$, the positive parameter indicating that as work centrality increases, the slope relating goal progress to vitality becomes more positive. This finding supports Hypothesis #15b, indicating that there was a stronger relationship for individuals high in work centrality than for those with low work centrality. To determine the nature of this interaction, vitality was mean-centered one standard deviation below the mean and one standard deviation above the mean. Figure 8 summarizes this relationship.

The chi-square analysis of the slope term indicated that there is remaining variance in the relationship, $\gamma_{21} = .04$, $\chi^2 (47) = 70.24$, $p < .05$, suggesting that other moderators should be considered.

Table 13

Results of Hierarchical Linear Modeling: Goal Progress and Vitality in the Family and Work Domains

Fixed effects	*Coefficient*	*Standard error*
Model for vitality		
Family domain		
Intercept, β_0		
Intercept 2, γ_{00}	3.49**	.14
Family centrality, γ_{01}	.32	.18
Main task demands, β_1		
Intercept 2, γ_{10}	.10*	.05
Family centrality, γ_{11}	-.10	.06
Goal progress perceptions, β_2		
Intercept 2, γ_{20}	.19**	.07
Family centrality, γ_{21}	.11	.09
Work domain		
Intercept, β_0		
Intercept 2, γ_{00}	3.37**	.14
Work centrality, γ_{01}	-.01	.17
Main task demands, β_1		
Intercept 2, γ_{10}	.07	.04
Work centrality, γ_{11}	-.01	.04
Goal progress perceptions, β_2		
Intercept 2, γ_{20}	.21**	.05
Work centrality, γ_{21}	.12*	.06

*$p < .05$
**$p < .01$

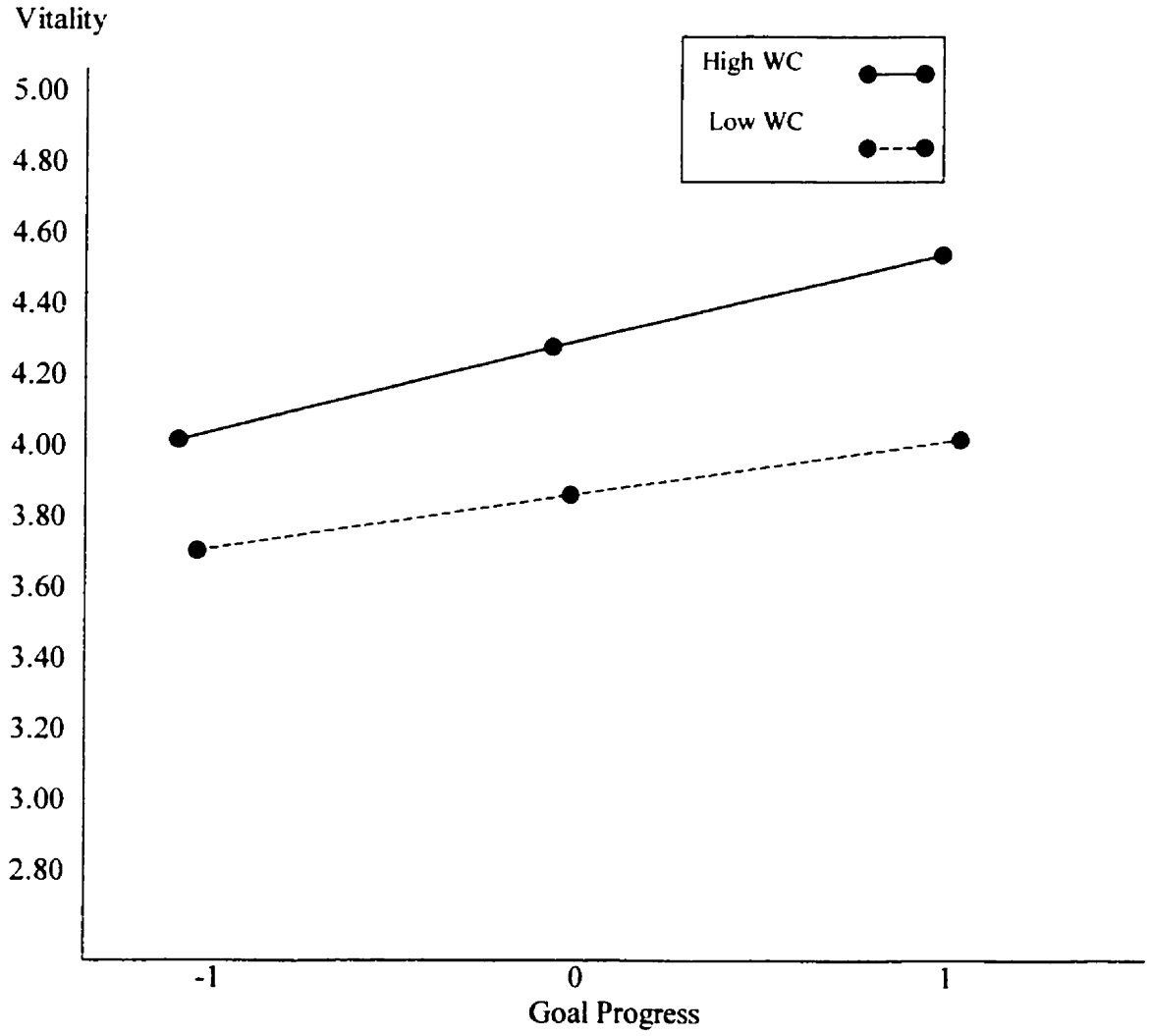

Figure 8. Interactive Effect of Work Goal Progress and Work Centrality on EOD Vitality.

End-of-day vitality and end-of-day goal progress perceptions. Hypothesis #14 states that vitality is positively related to goal progress and Hypotheses #15a-15b state that this relationship is moderated by role centrality. In order to test this hypothesis for end-of-day measures, end-of-day vitality scores were regressed on N-1 subject vectors (step 1), end-of-day family goal progress perceptions and work goal progress perceptions (step 2), and the domain goal progress X role centrality cross-product term (step 3). Between-subjects variability accounted for 64% of the variance in end-of-day vitality scores. At step 2, family and work goal perceptions accounted for a significant change in the amount of variance explained (R^2 change = 1%). Family goal progress was the only significant predictor of end-of-day vitality (b = .12, $p < .05$). High family goal progress was associated with high energy levels. Role centrality did not moderate these relationships at step 3. Please see Figure 6 for the path coefficients of the relationship between family goal progress and vitality and Figure 7 for the path coefficients of the relationship between work goal progress and vitality.

Supplemental Analyses

Supplemental analyses were conducted to examine the relationships among variables of interest across levels of experience (i.e., immediate, end-of-day). Specifically, daily averages of ESM measures of negative affect, positive affect, and vitality were calculated and related to end-of-day measures of family satisfaction, work satisfaction, vitality, work-family conflict and family work conflict through pooled time series analysis. Positive affect in the work and family domains, negative affect in the work and family domains, and vitality in the work and family domains were each

examined as separate predictors of end-of-day judgments and the interactions between each of these variables were tested. This was done to examine how experiences throughout the multiple role occupant's day influence his or her end-of-day experiences. Previous research found partial support for the relationship between average affect during the day and domain satisfaction (specifically, negative affect in the work domain was negatively related to end-of-day work satisfaction) (Williams & Alliger, 1994). The current study seeks to replicate these findings and extend them to the family domain. End-of-day inter-role conflict indicates the extent to which participation in one role made participation in another role more difficult (Greenhaus & Beutall, 1985). Work-family conflict indicates the extent to which participation in the work role made participation in the family role more difficult and family-work conflict indicates the extent to which participation in the family made participation in the work role more difficult. Inter-role conflict is of interest due to its established relationship with important personal outcomes for multiple role occupants, including decreased psychological well-being (Pleck, Staines, & Long, 1980). Previous research indicated that family distress was positively related to family-work conflict and work distress was positively related to work-family conflict (Frone, Yardley, & Markel, 1997). The relationship between average daily affect and vitality has not been examined in previous research. Pooled time-series analysis was used to regress the end-of-day measure of interest onto N-1 subject vectors (step 1) and the daily average of the ESM measure(s) of interest (step 2).

ESM Measures of Vitality, Positive Affect, and Negative Affect and End-of-Day Family Satisfaction

A large amount of the variance in end-of-day family satisfaction scores was due to between-subjects differences. Over 62% of the variance in family satisfaction scores was due to these individual differences. Vitality and negative affect experienced during the day in family activities were not significant predictors of end-of-day family satisfaction. However, positive affect experienced throughout the day in the family role was a significant, positive predictor of end-of-day family satisfaction ($b = .16$, $p < .05$) and significantly changed the amount of variance accounted for (R^2 change = 1%).

ESM Measures of Vitality, Positive Affect, and Negative Affect and End-of-Day Work Satisfaction

Sixty-two percent of the variance in end-of-day work satisfaction scores was accounted for by between-subjects differences. Vitality experienced throughout the day in the work role and positive affect experienced throughout the day in the work role did not contribute to the amount of variance accounted for and were not significant predictors of end-of-day work satisfaction. Daily experiences of negative affect, however, were a significant, negative predictor ($b = -.15$, $p < .05$) of end-of-day work satisfaction. Negative affect throughout the day contributed to a significant 1% change in the variance accounted for in end-of-day work satisfaction measures.

Table 14

Correlations Among Aggregated ESM Measures and EOD Satisfaction

	1	2	3	4	5	6	7	8
1. Work Positive Affect	1.00							
2. Work Negative Affect	-.26**	1.00						
3. Work Vitality	.83**	-.29**	1.00					
4. Family Positive Affect	.62**	-.01	.56**	1.00				
5. Family Negative Affect	.05	.30**	.09	-.22**	1.00			
6. Family Vitality	.50**	-.08	.61**	.77**	-.15*	1.00		
7. Work Satisfaction	.34**	-.12	.29**	.29**	.02	.24**	1.00	
8. Family Satisfaction	.25**	-.16*	.13	.39**	-.27**	.16*	.23**	1.00

*$p < .05$
**$p < .01$

ESM Measures of Negative Affect, Positive Affect, and Vitality and End-of-day Vitality

Pooled time-series analyses were conducted to examine the nature of the relationships between the ESM measures of vitality, negative affect, and positive affect and end-of-day vitality after finding significant correlations between the variables of interest. Table 15 presents the correlations. The supplemental analyses were conducted to examine the extent to which experiences during the day expanded or depleted participants' energy level and how they interacted to influence an individual's end-of-day energy level. End-of-day vitality was regressed on N-1 subject vectors (step 1) and the aggregated ESM variable(s) of interest.

Table 15

Correlations among Aggregated ESM Measures and EOD Vitality

	1	2	3	4	5	6	7
1. Work Positive Affect	1.00						
2. Work Negative Affect	-.26**	1.00					
3. Work Vitality	.83**	-.29**	1.00				
4. Family Positive Affect	.62**	-.01	.56**	1.00			
5. Family Negative Affect	.05	.30**	.09	-.22**	1.00		
6. Family Vitality	.50**	-.08	.61**	.77**	-.15*	1.00	
7. End-of-day Vitality	.29**	-.01	.30**	.31**	-.04	.42**	1.00

*$p < .05$
**$p < .01$

Average ESM negative affect and end-of-day vitality. Pooled time series analysis was used to examine (a) the main effects of average daily negative affect in the work and family roles (aggregated over the immediate experience diary reports) on end-of-day vitality, and (b) the interaction between negative affect in the family role and negative affect in the work role. To remove between-subjects variability in test scores, N-1 subject vectors were entered at step1. Average negative affect in the work and family roles were entered at step 2. At step 3, the Family Negative Affect X Work Negative Affect cross-product term was entered to examine the specified interaction. Between-subjects variability accounted for 74% of the variance in end-of-day vitality scores. At step 2, average daily negative affect in the family domain and average daily negative affect in the work domain did not contribute significantly to the variance accounted for and were not significant predictors of end-of-day vitality. However, at step 3, the interaction term contributed significantly to the variance accounted for (R^2 change = 1%) and was a significant, negative predictor (b = -.31, $p < .05$) of end-of-day vitality. What this suggests is that, while negative affect in any one domain alone does not influence end-of-day energy levels, the levels of negative affect in both roles combine to influence vitality. In order to examine the nature of the interaction, vitality was centered at the mean, one standard deviation below the mean, and one standard deviation above the mean. Figure 9 presents the results of this interaction, indicating that negative affect in the family domain interacted with negative affect in the work domain to create lower vitality levels than either negative affect alone.

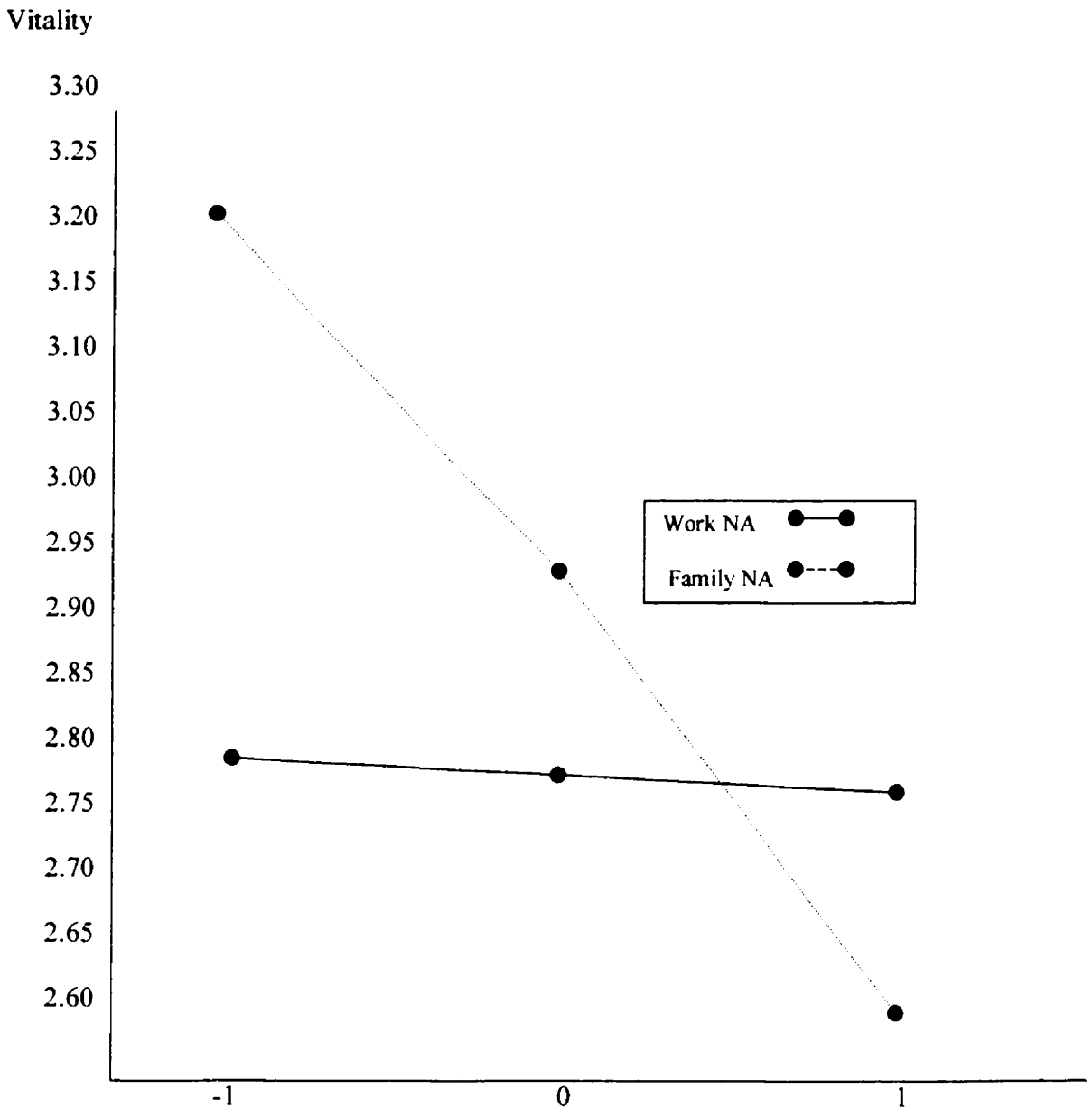

Figure 9. Interactive Effect of Negative Affect on EOD Vitality.

Average ESM positive affect and end-of-day vitality. A similar analysis was conducted to examine the main and interactive effects of average daily positive affect in the work and family roles (aggregated over the immediate experience diary reports) on end-of-day vitality. Between-subjects variability accounted for 74% of the variability in end-of-day vitality scores. The main effects of positive affect in the family domain and in the work domain were not significant, nor was the interaction term significant.

Average ESM vitality and end-of-day vitality. The main effects of average vitality scores when in the family role and average vitality scores when in the work role on end-of-day vitality, as well as the interaction between average vitality scores when in the family role and average vitality scores when in the work role were tested with pooled time-series analysis. N-1 subject vectors were entered at step 1. Vitality in the family role and vitality in the work role were entered at step 2, and the cross-product term of vitality while in the family role and vitality while in the work role was entered at step 3. Between-subjects variability accounted for 74% of score variance. At step 2, the predictors failed to contribute to the variance accounted for by individual differences and were not significant predictors of end-of-day vitality. At step 3, the interaction term did not add significantly to the proportion of variance accounted for and was not a significant predictor of end-of-day vitality.

ESM Measures of Affect and Vitality and EOD Inter-Role Conflict

Exploratory analyses were conducted to examine how affect throughout the day may influence levels of inter-role conflict reported at the end of the day. Pooled time-series analyses were conducted to examine the nature of the relationships between the ESM measures of vitality, negative affect, and positive affect and inter-role conflict

(work-family and family-work conflict). Table 15 presents the correlations between these variables. Both intra-role affect experiences and their interactions, as well as inter-role affect and vitality experiences and their interactions were explored. Intra-role affect experiences explored were: average daily positive and negative affect in the family domain and their interaction and average daily positive and negative affect in the work domain and their interaction. Inter-role relationships explored were: average daily positive affect in the work role and family role and their interaction; average daily negative affect in the work role and family role and their interaction; and average daily vitality in the work role and family role. End-of-day inter-role conflict was regressed on N-1 subject vectors (step 1), the aggregated ESM variables of interest (step 2), and the cross-product term of the ESM variables of interest (step 3). Between-subjects differences accounted for 49% of the variability in work-family conflict scores. Of all the analyses run, only average daily levels of work and family negative affect contributed significantly to the amount of variability accounted for (R^2 change = 2%). The only significant predictor of work-family conflict in this model was average negative affect in the work domain. The interaction term was not significant. No other significant predictors were found in this set of analyses. End-of-day family-work conflict was not predicted by any of the affect or vitality measures.

Table 15

Correlations Among Aggregated ESM Measures and Work-Family and Family-Work Conflict

	1	2	3	4	5	6	7	8
1. Work Positive Affect	1.00							
2. Work Negative Affect	-.26**	1.00						
3. Work Vitality	.83**	-.29**	1.00					
4. Family Positive Affect	.62**	-.01	.56**	1.00				
5. Family Negative Affect	.05	.30**	.09	-.22**	1.00			
6. Family Vitality	.50**	-.08	.61**	.77**	-.15*	1.00		
7. Work-Family Conflict	.10	.18**	.03	.02	.13**	.14*	1.00	
8. Family-Work Conflict	.13*	.13	.07	.04	.17**	.06	.29**	1.00

*$p < .05$
**$p < .01$

Chapter 5

Discussion

The purpose of the current study was to explore a model of the external interruption cycle, examining behavioral and affective responses to both inter- and intra-role interruptions. Unfortunately, hypotheses related to inter-role interruption could not be tested because of the low occurrence of such interruptions. However, the findings do add to the current literature and knowledge of intra-role interruptions in the work and family domains and the daily outcomes associated with work and family tasks. In addition, the experience-sampling methodology provided insight into the relationships between specific daily events and affective well-being. This methodology also allowed relationships among role characteristics and outcomes to be assessed beyond the one-time, global assessments most frequently used in work-family research (Burke & Greenglass, 1987).

Previous research by Williams (Williams and Alliger, 1994; Williams et al., 1991) found that inter-role juggling occurred in 9% and 8% (respectively) of the task juggling occasions. In this study, 2% of all interruptions were inter-role interruptions. As mentioned previously, family-work interruptions were spread evenly (1-3 interruptions) over 24 participants (16 females, 8 males) and work-family interruptions were spread evenly over 8 participants (1 interruption per person; 5 females, 3 males). The low frequency of inter-role interruptions in this study as compared to reports of inter-role juggling in previous research may be due to differences in the conceptualizations of inter-role juggling and inter-role interruptions. Williams' line of research asked individuals if they had been juggling more than one task. This conceptualization would include external interruptions (when a precipitating event had occurred) as well as internal interruptions (when the interruption is self-initiated). Individuals may have been juggling

multiple roles because a family member unexpectedly called them at work or because they called home while at work. The current study examined external interruptions and conceptualized an interruption as a precipitating event interrupting the individual's current task. This conceptualization, which was reviewed with participants at their orientation session, *excludes* internal, self-initiated interruptions. I chose to exclude self-initiated interruptions because previous research suggested that the unexpected nature of interruptions is the primary cause of negative affective reactions to interruption (Mandler, 1990). The low base rate for external interruptions in this study suggests that either a large portion of interruptions in the Williams' et al studies were internal interruptions, or that the present sample was different in important ways than those of previous studies.

It seems possible that the present sample was different from samples found in previous studies in terms of general work-family conflict. Somewhat unexpectedly, the profile of participants in this study indicate that they had low levels of work-family interaction. Reported levels of daily inter-role conflict and inter-role juggling were low, while reported inter-role separation was high. The base rate of inter-role interruptions was extremely low. Although the profile of this sample indicates that they were married with 1-2 young children, and thus were balancing the roles of spouse, parent, and full-time employee, their work and family domains appear to be kept distinct and separate from one another. Due to participants' awareness of their multiple demands, they may have been active in their attempts to manage their roles and decrease unexpected interruptions. Child-care arrangements and time management may have allowed for the separation of roles. Twenty-five percent of participants were recruited through signs at daycare centers. Sixty-three percent of participants had one or more children 6 years of

age or older. These children were enrolled in school, and the data were collected during the academic school year. Child-care arrangements and enrollment in school may have allowed for the family domain to be kept separate from the work domain. Thus, although the demographic pattern of the present sample was similar to that reported in previous studies, the participants in this study reported lower than expected levels of inter-role intrusions and conflict.

Although caution must be taken when interpreting the results of this study, as this sample may have reacted differently to daily events than those with greater amounts of work-family interaction, all elements of the current model that were presented for replication of previous research were replicated. This suggests that the participants in the current study responded similarly to previous work-family research participants on several facets of work-family life, and therefore their responses on new facets may be comparable to other samples. Additionally, several relationships that were included as part of supplemental analyses replicated previous research. The following relationships specified in Figure 1 replicated previous research: the positive relationship between interruptions and negative affect, the negative relationship between interruptions and positive affect, the positive relationship between goal progress and positive affect, and the negative relationship between goal progress and negative affect (Williams & Alliger, 1994). Supplemental analyses found the following replications: the positive relationship between juggling and perceptions of inter-role conflict (Williams & Alliger, 1994) and the positive relationship between negative affect experienced throughout the day in the work domain and work satisfaction (Williams et al., 1991). These replications indicate

that the current sample did not respond differently to daily events than multiple role occupants sampled in previous research.

Intra-Role External Task Interruption Model

Because of the low incidence of inter-role interruptions, analyses focused primarily on the outcomes of intra-role task interruption. The conceptual model for this study predicted that one's behavioral response to an external interruption would be determined by the relative demands of the current and interrupting task, individual and situational differences in polychronicity, and work and family role identity. One's strategy for dealing with interruptions, in turn, was hypothesized to influence immediate mood states and vitality, in part through their effects on perceived goal progress. These immediate experiences, in turn, were hypothesized to relate to end-of-day feelings of role satisfaction and vitality.

Outcomes of interruptions. Interruptions (primarily intra-role) were associated with increased negative affect, decreased positive affect, perceptions of decreased goal progress, and increased task demands. These effects occurred in both the work and family domains. This data replicates and expands upon previous research that found interruptions to have a positive relationship with negative affect and a negative relationship with positive affect (Williams & Alliger, 1994). The decreased goal progress perceptions and increased perceived task demands participants experienced upon interruption in the current study further underline the disruptive effects of interruptions at the level of immediate experience.

Interruption and behavioral strategies. A main objective of this study was to identify the types of strategies that individuals use to handle external interruption in

naturalistic settings. Results revealed that the participants had an overall tendency to engage in behaviors that either attended solely to the interrupting task (pre-emption) or attempted to simultaneously balance both tasks (simultaneity). Attending solely to the main task was not a frequently chosen behavioral strategy. This finding suggests that individual's attention is drawn to the interruption and it is dealt with in some manner immediately. Relative task demands, polychronicity, experienced work-unit polychronicity, and role centrality were explored as moderators of the relationship between interruption and behavior. Contrary to the hypotheses, role centrality and polychronicity were not related to strategy for dealing with interruptions. Task demands were related to interruption, but not in the hypothesized way.

Results of the examination of the relationship between behavioral strategy and relative task demands supported only the hypothesized relationship between the interrupting task having higher demands and engagement in pre-emptive strategies. The relationship found between task demands and preemption may have been due to individual's overall tendency to engage in pre-emption (regardless of task demands). When looking over all relative task demand conditions, individuals were more likely to engage in pre-emptive strategies or simultaneity than sequential processing. The pattern of results indicated that when the interrupting task had higher demands and when the two tasks were perceived to have equal demands, individuals were most likely to engage in pre-emptive strategies. When the main task was associated with higher demands than the interrupting task individuals engaged in pre-emptive strategies or simultaneity. These results suggest that individuals tend to attend to interruptions, rather than putting the interruption aside.

The type of interruption that participants in this study experienced may explain the high incidence of pre-emption and simultaneity. Face-to-face interruptions (43% of all interruptions) were the most frequently reported type of interruption. Interruptions that are direct in-person interactions require an immediate response. Individuals may feel more pressure to act immediately and address the individual. Sequential processing, which entails putting aside the interruption to focus on the main task, is decidedly more difficult when the interruption allows for no time to plan a response. In person, the interaction begins immediately, thus determining the categorization of your response. E-mail or pager messages allow for individuals to think about their priorities and plan a response accordingly. A phone call also may be easier to put aside, as the person calling is not physically present. When the interrupted individual hangs up the phone, they can choose to address the individual's request immediately or at a later time.

A desire to maintain a certain performance level on the main activity may also determine the behavioral response an individual makes. Resolution of an interruption allows for attention to be focused completely on the main task. Simultaneity was a frequent behavioral response to interruption only when the interrupting task was less demanding than the main task. If the interrupting task had equal or higher task demands associated with it, individuals opted to attend to the interruption first. This suggests that participants chose to juggle two tasks only when performance of the interrupting task would not hinder performance on the main task. An interruption may also be a welcome diversion from a demanding or a tedious task, representing a task that you can successfully resolve before resuming performance on your main task.

The other proposed moderators did not affect behavioral strategies. The proposed relationships between polychronicity and simultaneity and experienced work-unit polychronicity and simultaneity, while in the specified direction, were not significant. This may be due to the number of participants, which while acceptable for a repeated-measures design, is less than the number typically utilized when examining relationships involving personality variables. The behaviors also leaned pre-dominantly towards pre-emption and simultaneity in all situations, therefore there was not a lot of variability in behavior to be explained by moderators.

Work centrality and family centrality could not be explored as moderators of the relationship between inter-role interruptions and behavior as the base rate of inter-role interruptions was extremely low.

Behavioral strategies and outcomes. Behavioral strategy was found to have little effect on either goal progress perceptions or affect at the immediate level of experience. Although it was anticipated that individual's performance of the main activity would suffer if they attended to an interruption, participants did not perceive a delay in goal progress associated with their behavioral strategy. Individuals, indicating their level of goal progress through self-report, may not have been able to objectively report the performance implications of their behavior. This finding, along with the finding that behavioral strategies were not related to affect, suggests that behavioral responses did not impact the personal outcomes of participants.

Cross-level analyses revealed a somewhat surprising effect. Interestingly, the number of interruptions during the day at the work role was positively related to end-of-day perceptions of goal progress. One explanation for this finding is that frequent

interruptions at work signal involvement in several work projects. While progress may be delayed on one's current task, there is an overall sense of accomplishment in the work domain, as several work projects have been attended to.

The explanation proffered for behavioral strategies not being related to goal progress perceptions may also apply for end-of-day family goal progress. There was no relationship between number of interruptions while in the family role and family goal progress perceptions, or between behavioral strategies and family goal progress perceptions. When evaluating overall goal progress, individuals may not be able to objectively make judgments regarding the behavioral strategies-goal progress perceptions link.

Additionally, the nature of interruptions in the work domain and in the family domain, as well as the goals individuals are conceptualizing when questioned about end-of-day goal progress, may play a role in the perception of interruptions and behavioral strategies being related to goal progress. The intra-role interruptions experienced in the work domain may have been relevant to other work-related goals, while the interruptions experienced in the family domain may not have been relevant to family-related goals. If the family goals were greater in scope, daily interruptions may not influence the perception of goal progress and longer periods of time would need examination. More information regarding the goals individuals conceived of at the end of the day would help account for the relationships found.

Supplemental analyses indicated that the interruption itself, rather than the behavioral response to the interruption, may have implications for personal outcomes. Interruptions, consistent with previous research (Williams & Alliger, 1994), were

positively related to negative affect. Participants reported greater negative affect and less positive affect when their main activity had been interrupted than when no interruption had occurred. Participants also reported less goal progress on their main activity and perceived the main activity as having greater demands when an interruption occurred. The initial disruption of an interruption may impact personal outcomes, but after a behavioral response to the interruption occurs, the negative impact of the interruption may have dissipated.

Goal progress and affective outcomes. Although behavior was not linked to perceived goal progress or affect, goal progress perceptions were linked to important personal outcomes for participants in this study. Specifically, the relationships between both family and work goal progress and personal outcomes were explored. In the work-family literature, family goals are often ignored. The significant relationships found between family goal progress and personal outcomes in this study indicate that family goals play an important role in the daily well-being of multiple role occupants. The goals that individuals have in both the work realm and the family realm appear to exert a consistent effect on the affective states, energy levels, and satisfaction levels of multiple role occupants. This effect is pervasive, acting at the immediate level of experience and in daily evaluations of experience.

The data demonstrate links between perceptions of goal progress and both affect and vitality in the work and family domains. The relationships between immediate experience measures of task demands and both affect and vitality were also explored, as task demands have been found to be related to affective reactions (Bolger, DeLongis, Kessler, & Schilling, 1989; Fox, Dwyer, & Ganster, 1993; Williams & Alliger, 1994).

Goal progress was negatively related to negative affect and positively related to positive affect at the level of immediate experience. High levels of family goal progress were associated with high levels of positive affect and low levels of negative affect and high levels of work goal progress were associated with low negative affect and high positive affect. These findings supported the hypotheses and the tenets of Carver and Scheier's (1981) control theory, as well as research findings that indicated that goal progress was negatively related to distress (Repetti, 1989; Williams & Alliger, 1994). Goal progress is posited to reduce the tension-producing discrepancy between intended and actual behavior, thus reducing negative affect. The cross-domain findings reported here underline the pervasive influence of goal progress on the well-being of participants.

A significant relationship between goal progress and vitality was found at the immediate level of experience. This relationship suggests that individuals feel that they have more personal energy when they are accomplishing their goals. This relationship was significant in both the work and family domains. Individuals' energy level was higher throughout the day when they were making progress on their main activity. Work centrality moderated the relationship between work goal progress and vitality, such that as work centrality increased, the relationship between work goal progress and vitality grew stronger. The importance of an individual's work role to their self-identity increased the effect of goal progress in the work domain. Future research may want to test the extent to which behaviors consistent with the central role are autonomous behaviors, as autonomous behaviors have been found to be positively related to vitality. Behaviors consistent with the central role may be perceived as more autonomous than

non-central behaviors, as central behaviors may be more likely to represent the individual's "self."

Family goal progress was found to be positively related to end-of-day vitality. At the end of the day, individual's perceptions of how much goal progress they had made on family goals was positively related to the amount of energy they reported having. Family goal progress may have exerted an influence due to the temporal proximity of family events to end-of-day reports of vitality. During the typical workweek, individuals are in their work role from 9am until 5pm and their family role from 5pm into the evening. End-of-day reports were given in the evening and therefore may have been more influenced by family events than by work events earlier in the day. Another explanation would be the high level of family centrality reported by this group of participants. It is possible that the importance of family to their self-identity led to their daily family experiences having the greatest impact on their overall vitality.

The amount of energy an individual has throughout their day and at the end of their day can indicate how enriching or depleting a given role or roles can be. The findings reported here suggest that a role can be energizing if goal progress is made while in that role. This occurred for specific work and family goals throughout the course of the multiple role occupants' day as well as for end-of-day perceptions of general family goal progress. Goal progress appears to energize individuals in their current task as well as for future tasks. Information regarding antecedents of levels of vitality is valuable due to the health outcomes associated with varying levels of vitality. Vitality has been found to be positively related to mental health (McNair, Loor, & Dopleman, 1971), physical health (Ryan & Frederick, 1997), and negatively related to fatigue (McNair, Loor, &

Dopleman, 1971). If we can specify the experiences and/or roles that vitality is increased or decreased by, further insight into the processes that impact the health of multiple role occupants is provided.

Contrary to my hypotheses, family centrality and work centrality did not moderate the effects of goal progress on affect. There was not a significant amount of between-subject variance in positive affect scores in the family domain after accounting for goal progress perceptions, implying that exploration of other moderators is unnecessary. However, there was a significant amount of variability left to be explained in the relationship between family goal progress perceptions and negative affect and work goal perceptions and negative and positive affect, suggesting that other moderators of the relationship remain to be explored.

Future research may want to explore goal importance and role involvement as possible moderators of goal progress effects. Role centrality was assumed to represent goal importance, however, other goals may be important to the individual at the time of study participation. Goal importance has been found to proposed as a moderator of the relationship between goal progress and affect (Carver & Scheier, 1990), with the expectation that the more important the goal is, the stronger the hypothesized relationships between goal progress and affect. Rather than indirectly measuring goal importance through role centrality, a direct measure of goal importance would be more informative. Role involvement may provide more information regarding the relationship between goal progress and affect than role centrality. Role centrality represents the importance of a given role to an individual's identity, while role involvement indicates the importance of a given role currently (Paullay et al., 1994). The goals the individual is

most involved with may exert more of an influence over their affective reactions than goals that the individual is not currently involved in. Job involvement has been found to exacerbate the relationship between role stressors and alcohol use and physical health (Frone, Russell, & Cooper, 1995). The centrality of a role does not reflect a current absorption with a role, which may be more relevant for the current study.

End-of-day goal progress perceptions were positively related to levels of end-of-day family satisfaction and end-of-day work satisfaction, supporting the hypothesized relationships. When perceptions of goal progress were high, role satisfaction was high and when perceptions of goal progress were low, role satisfaction was low. Satisfaction is an important outcome for individuals, as it indicates the level of stress an individual is experiencing. This finding supports control theory (Carver & Scheier, 1981), as goal progress led to increased domain satisfaction for participants. Role centrality did not moderate this relationship. Role involvement may also be a more appropriate moderator for this relationship, as daily levels of satisfaction may be more closely linked to goals that are important at the time of measurement, rather than identity-relevant goals, which may not be the focus of the individual's attention.

Task demands and affective outcomes. Although not part of the hypothesized model, task demands were found to influence negative affect in the family and work domains. As task demands increased, participants experienced higher levels of negative affect, while their level of positive affect was unchanged. These findings support previous research (Bolger et al., 1989; Williams & Alliger, 1994). Because high task demands are associated with greater time urgency and increased attentional demands, the

individual finds the task less enjoyable than a simpler, less urgent task. The individual may be in an "anxiety state," in which they do not have the capacity to cope with high demands (Fisher, 1998).

Interestingly, task demands were found to be a positive predictor of vitality level in the family role, but were unrelated to energy level in the work role. This finding suggests that individuals rise to the occasion in family tasks. The importance of the family role to participants in this study may explain this finding. Participants may have felt more energized because family tasks (and their demands) are important to them and they desired a high level of involvement with the family role. Other explanations may be the personal nature of the tasks in the family domain (you must pay attention to your child, therefore you summon the energy to do so) or a ceiling effect for energy exerted in the work role.

Although the findings of the current study did not support the overall proposed model, support was found for several of the hypothesized relationships. The hypothesized relationships between interruptions and behavioral strategies and between behavioral strategies and perceptions of goal progress, affect, and vitality were not supported. Participants attended to interruptions and did not associate their behavioral strategies with personal outcomes. However, goal progress perceptions were related to subjective well-being measures (affect, vitality, and satisfaction). These relationships were significant in both the work and family domains. The cross-domain effects indicate that goal progress perceptions had a pervasive effect on the subjective well-being of participants. The proposed moderators did not influence the relationships found in this

research. Significant between-subjects variance suggests that additional moderators should be considered.

Supplemental analyses. After testing the model, supplemental cross-level analyses were conducted to examine the influence of affect and vitality experienced throughout the day (measured at the level of immediate experience) on end-of-day reports of work and family satisfaction. Work satisfaction and family satisfaction are frequent subjects of research, each with important outcomes. This study replicated Williams et al.'s (1991) finding that negative affect in the work domain was negatively related to end-of-day work satisfaction. Additionally, the current study found that positive affect in the family domain contributed positively to levels of end-of-day family satisfaction. For this group of participants, their positive experiences shaped their experience of the family role, with positive experiences having more weight than negative experiences in their determination of levels of satisfaction. Negative experiences had greater weighting than positive experiences in the determination of work satisfaction.

Participants' survey reports of role centrality and satisfaction may help explain these findings. Participants in this study reported high levels of family centrality and family satisfaction on survey measures. The family role was important to participants and in order to maintain high levels of satisfaction with this role, they may have focused on positive experiences. This may be healthier for multiple role occupants, as the family roles they inhabit are more permanent than their work role. As the work role can be changed and participants found their work role to be only moderately important and satisfying, they may have decreased emphasis on positive feelings in the work role.

The relationships between average negative affect throughout the day, average positive affect throughout the day, and average vitality throughout the day in the family and the work domains and end-of-day vitality were also examined. An interactive effect of negative affect in the family domain and negative affect in the work domain was found. While neither type of negative affect was a significant predictor of vitality alone, the joint effect of negative affect in the work and family domains significantly decreased vitality. That is, high negative affect in both domains decreased vitality. This is an example of how multiple role demands may deplete energy levels in multiple role occupants. While positive affect and vitality in both domains did not interact to increase the individual's energy level, negative affective experiences combined to decrease energy.

In the current research, the major predictors of end-of-day vitality were end-of-day perceptions of family goal progress and the interaction of aggregated daily negative affect in the family and work domains. Vitality was influenced by overall perceptions of daily family goal progress and cumulative daily affective experiences. End-of-day satisfaction levels were predicted by end-of-day goal progress perceptions and aggregated daily affective experiences. Short-term family satisfaction was predicted by aggregated positive affect in the family role throughout the day, while short-term work satisfaction was predicted by aggregated negative affect in the work role throughout the day. Family and work experiences acted both separately and in combination to determine the daily well-being of participants.

Exploratory analyses also examined the relationship between both aggregated daily affect and vitality and end-of-day reports of inter-role conflict. Aggregated affect

did not appear to play a role in end-of-day reports of family-work conflict, however, high levels of negative affect at work led to high levels of reported end-of-day work-family conflict. Negative affect experienced in the work domain may have spilled over into the family domain. The negative affect brought into the family domain may have increased perceptions of work entering and interrupting family activities. End-of-day reports of inter-role conflict were also predicted by perceptions of inter-role juggling and separation of roles. Inter-role juggling was a significant positive predictor of both work-family and family-work conflict and separation of roles reduced family-work conflict. Participants in this study found inter-role juggling to be stressful, and the low base rate of reported inter-role interruptions might reflect their attempts to keep these roles separate.

Limitations

Inter-role interruptions were of interest in this study and were the basis of a few of the hypotheses. Unfortunately, these hypotheses could not be tested due to the extremely low base rate of interruptions involving work interrupting family (N = 8) and family interrupting work (N = 45) in this group of individuals. Inter-role interruptions accounted for 2% of all interruptions. The participants in this study were able to keep work and family quite separate from one another. This may not be typical of other multiple role occupants, as other studies examining inter-role interruptions reported an inter-role interruption rate of 9% and 8% respectively (Williams & Alliger, 1994; Williams et al, 1991).

While the number of participants (N = 52) is acceptable for experience sampling data, it may not be powerful enough for testing individual differences. The number of participants is typical of studies that utilize the experience sampling methodology, as the

primary focus is sampling responses within individuals, not between individuals. The individuals in this study held professional, clerical, or managerial jobs, restricting the extent to which this study's findings can be generalized to all working parents. Another factor restricting the generalizability of these findings is the possible presence of self-selection effects. Participants on this study were volunteers who were interested in work-family research. As previously mentioned, individuals in this study were fairly high in family centrality, this may reflect that volunteers are more interested in family matters than the working parent population at large. Individuals may also express an interest in this line of research due to the strain that they are currently experiencing balancing their work and family roles.

The experience sampling methodology, through repeated measurements of the same variables, may make individuals more aware of their experiences than they would be ordinarily. However, individuals may have been unaware of the scales within the measurements and thus unable to inflate or deflate relationships between variables.

The use of self-reports for both the independent and dependent variables may also be cause for concern. Consistency bias and common method variance are concerns associated with the use of self-report measures. The findings reported in this study present an argument against consistency bias. For example, positive and negative affect were found to be differently related to the experience of satisfaction, dependent on the domain. Although positive affect in the family domain during the day was related to end-of-day family satisfaction, neither negative nor positive affect in the work domain were related to family satisfaction. If individuals were attempting to be consistent in their affect reports for each domain, similar relationships would have been reported. One

argument against common method bias is the different effects for different dependent variables. As one example, average daily negative affect influenced work satisfaction, not family satisfaction. Another argument against common method and consistency bias is that in a repeated measures design, these demand characteristics are expected to decrease over repeated measurement.

Another element of concern in utilizing self-report in this study was that the measures required individuals to use their conceptualization of an interruption, which may not have been standardized from participant to participant. Individuals also recorded their own behaviors, but an objective observer may have been able to capture behavior sequences or standardize categorizations of behavior. It is hoped that the orientation session clarified definitions of interruption and categorizations of behavior, which were extensively reviewed with participants. Implications

This research revealed important relationships at the level of immediate experience, the daily level of experience, and across levels of experience. At the level of immediate experience, when interruptions in either the family domain or the work domain occurred, multiple role occupants attended to the interruptions. Participants either attended solely to the interrupting task or the attempted to balance both tasks. Multiple role occupants may be more capable of attending to interruptions quickly and/or balancing multiple tasks due to the numerous and constant demands on their time from both the family and work domain. Individuals who do not balance both work and family may exhibit a different behavioral strategy pattern.

Interruptions were associated with negative affect at the level of immediate experience, but behavioral strategies were not. Behavioral strategies were also not

associated with goal progress perceptions at the level of immediate experience. However, end-of-day goal progress was positively associated with the daily number of interruptions and frequency of engagement in pre-emption and simultaneity in the work domain. Although behaviors did not have immediate implications for multiple role occupants, daily experiences in the work domain influenced end-of-day perceptions of work goal progress. Family goals may be longer-term than work goals and would therefore not be influenced by aggregated immediate experiences.

Goal progress, in turn, acted to influence personal outcomes at both the immediate and end-of-day levels. These findings suggest that goals are powerful antecedents of daily affect, satisfaction, and energy levels. Both work goal progress and family goal progress act to create an overall level of well-being throughout the multiple role occupant's day.

Cross-level analyses indicated that affect levels throughout the day have a pervasive effect on end-of-day role satisfaction levels. This is a form of spillover, as positive feelings in the family domain spilled over to influence overall assessments of the family role and negative feelings experienced in the work role throughout the day spilled over to influence overall assessments of work satisfaction. This spillover effect only occurred within a given role, inter-role affect spillover was not found. This implies that the experiences one has in a given role have the strongest implications for outcomes in that role.

The significant cross-level findings in this study underline the importance of conducting research that spans more than one level of analysis. Our profile of multiple role occupants will be one-dimensional if survey measures continue to be the primary

method of measuring variables of interest. As indicated in this research, the well-being of multiple role occupants fluctuates throughout the day and in order to capture the antecedents of well-being our methodology must match the fluctuating nature of the variables of interest.

Future Research

The tendency for individuals to attend to interruptions regardless of task demands leads to questions regarding the nature of interruptions and how individuals experience interruptions. Asking individuals the duration of the interruption and why they attended to the interruption may provide the necessary information. Was it the immediacy of interruptions that consisted of interpersonal interactions (face-to-face interruptions, phone calls), leaving no time to plan a response the reason why interruptions were attended to? Did the desire to maintain levels of performance on the main task play a role in the selection of a behavioral strategy? Future research asking these questions may provide insight into the selection of a behavioral strategy upon interruption.

The nature of the goals that individuals were conceptualizing for immediate experience and end-of-day measures of goal progress would help clarify the relationships that were found between goal progress and immediate experience and end-of-day measures. Individuals may play more of a role in establishing their family goals than in establishing their work goals, as work goals may occur in response to current project or task demands. Different conceptualizations of what goals in family domain consist of and what goals in the work domain consist of may account for the different relationships between work goal progress and variables of interest and family goal progress and

variables of interest. Family goals may be larger in scope (a healthy family) than work goals (finish Task A) and thus may be less influenced by immediate goal progress. Individuals may set smaller work goals to continuously motivate themselves in the workplace but not in the family domain. Future research asking individuals about their current goals and having them rate progress on each of these goals each day may provide insight into the antecedents and outcomes of goal progress.

Role centrality did not moderate the majority of the relationships specified in the current study. Future research examining other moderators (such as job involvement and goal importance) of the relationships specified in this study is warranted. Work centrality strengthened the relationship between work goal progress and vitality at the immediate level of experience. Future research may explore the extent to which behaviors consistent with a central role are autonomous behaviors, which have been positively linked to vitality in previous research. Also, research utilizing objective criteria of interruptions, behavior, and performance would allow for a more precise examination of the variables in this study.

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Appendices

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Appendix A

Work Centrality

Instructions: Please circle the number which best indicates the extent to which you agree or disagree with the statement in the left column, according to the scale indicated below.

1=Strongly Disagree (**SD**)
2=Disagree
3=Somewhat Disagree
4=Neutral (**N**)
5=Somewhat Agree
6=Agree
7=Strongly Agree (**SA**)

SD			**N**			**SA**
1	2	3	4	5	6	7

1. The most important things that happen to me involve my work.
2. I have other activities more important than my work.
3. My work role is central to my self-definition.
4. While at work, I concentrate only on my work role.
5. I consider a good indication of my worth to be how good a worker I am.
6. Work is a large part of my life.
7. I feel that an individual's life goals should be work oriented.
8. My work role is only a small part of who I am.
9. If unemployment benefits were really high, I would prefer to stay at home with my family.
10. Overall, I consider work to be central to my existence.

Appendix B

Family Centrality

Instructions: Please circle the number which best indicates the extent to which you agree or disagree with the statement in the left column, according to the scale indicated below.

1=Strongly Disagree (**SD**)
2=Disagree
3=Somewhat Disagree
4=Neutral (**N**)
5=Somewhat Agree
6=Agree
7=Strongly Agree (**SA**)

SD			**N**			**SA**
1	2	3	4	5	6	7

1. I consider a good indication of my worth to be how good a family member I am (father/mother/husband/wife, etc.).
2. When the workday is finished, I forget about my job and only pay attention to my family.
3. I consider family to be central to my life.
4. Family is a large part of my life.
5. In my view, an individual's personal life goals should be family oriented.
6. To me, family is only a small part of who I am.
7. My role in my family is central to my self-definition.
8. The most important things that happen to me involve my family.
9. I would probably not work if I didn't need the money, but I would stay home with my family instead.
10. I have other activities more important to me than my family.

Appendix C

Polychronicity

Instructions: Please circle the number that best indicates your degree of agreement with the statement in the left column, according to the scale indicated.

1=Low
4=Moderate
7=High

1. I prefer to do one thing at a time.

2. I would rather complete an entire project every day than complete parts of several projects.

3. I believe people should try to do many things at once.

4. When I work by myself, I usually work on one project at a time.

5. I like to juggle several activities at the same time.

Appendix D

Experienced Work Unit Polychronicity

1. My supervisor prefers that I do one thing at a time.
2. Most of the people in my work unit try to complete an entire project every day rather than complete parts of several projects.
3. My supervisor believes that I should try to do many things at once.
4. Most of the people in my work unit try to do many things at once.
5. When people in my work unit work by themselves, they usually work on one project at a time.
6. My supervisor wants me to juggle several activities at the same time.
7. Most of the people in my work unit try to do one thing at a time.
8. Most of the people in my work unit try to juggle several activities at one time.

Appendix E

Work Satisfaction

Instructions: Please circle the number that comes closest to reflecting your opinion about the statement.

1 = Disagree very much	4 = Agree slightly
2 = Disagree moderately	5 = Agree moderately
3 = Disagree slightly	6 = Agree very much

1. I feel I am being paid a fair amount for the work I do.
2. There is really too little chance for promotion on my job.
3. My supervisor is quite competent in doing his/her job.
4. I am not satisfied with the benefits I receive.
5. When I do a good job, I receive the recognition for it that I should receive.
6. Many of our rules and procedures make doing a good job difficult.
7. I like the people I work with.
8. I sometimes feel my job is meaningless.
9. Communications seem good within my organization.
10. Raises are too few and far between.
11. Those who do well on the job stand a fair chance of being promoted.
12. My supervisor is unfair to me.
13. The benefits we receive are as good as most other organizations offer.
14. I do not feel that the work I do is appreciated.
15. My efforts to do a good job are seldom blocked by red tape.
16. I find I have to work harder at my job because of the incompetence of people I work with.
17. I like doing the things I do at work.
18. The goals of my organization are not clear to me.

Appendix F

Family Satisfaction

Instructions: Please circle the number that comes closest to reflecting your opinion about the statement.

1 = Disagree very much	4 = Agree slightly
2 = Disagree moderately	5 = Agree moderately
3 = Disagree slightly	6 = Agree very much

1. My family life is satisfying.
2. The tasks I perform in my family life are worthwhile.
3. I have a good time with my family.
4. My relationship with my partner is enjoyable.
5. I would do anything necessary for any member of my family.
6. My family life makes me feel content.
7. My relationship with my child(ren) is satisfying.
8. I am happy with my family just the way it is.
9. My relationship with my extended family is enjoyable.
10. There is a great deal about my family that I would change if I could.

Appendix G

Work Interfering with Family and Family Interfering with Work

Instructions: Please circle the number that best indicates the frequency with which the following events occur.

1=Never
4=Sometimes
7=Very often

1. How often do job-related tasks or activities interrupt your family activities?
2. How often do you end up using time usually reserved for family for work tasks instead?

1. How often does your homelife interfere with your responsibilities at work?
2. How often do you end up using time at work for family-related tasks?

Appendix H

Experience-Sampling Diary

DATE: _____ Day of Week (circle): S M T W Th F Sa Time of day: _____

1. Where were you when the alarm sounded? __At work __At home __In transit __Other:_____

2. Please indicate the extent to which each of the following items describe **how you felt immediately prior to the alarm sounding**. Circle the number that corresponds to how you felt.

	Not at all						Very much		Not at all						Very much
At rest	0	1	2	3	4	5	6		Distressed	0	1	2	3	4	5	6
Blue	0	1	2	3	4	5	6		Excited	0	1	2	3	4	5	6
Relaxed	0	1	2	3	4	5	6		Enthusiastic	0	1	2	3	4	5	6
Astonished	0	1	2	3	4	5	6		Interested	0	1	2	3	4	5	6
Quiet	0	1	2	3	4	5	6		Awake	0	1	2	3	4	5	6
Happy	0	1	2	3	4	5	6		Calm	0	1	2	3	4	5	6
Content	0	1	2	3	4	5	6		Aroused	0	1	2	3	4	5	6
Sad	0	1	2	3	4	5	6		Sluggish	0	1	2	3	4	5	6
Still	0	1	2	3	4	5	6		Drowsy	0	1	2	3	4	5	6
Energized	0	1	2	3	4	5	6		Unhappy	0	1	2	3	4	5	6
Upset	0	1	2	3	4	5	6		Surprised	0	1	2	3	4	5	6
Alert	0	1	2	3	4	5	6		Alive/Vital	0	1	2	3	4	5	6

3. In the past **1/2 hour, what has been the main activity or task that you have been involved in**? Please describe the activity briefly in the space provided (e.g., "chores," "at a meeting," "working on project," "exercising").

__ Family-related(describe:_____) __ Personal/leisure (describe:_____)

__ Work-related(describe:_____) __ Other (describe:_____)

Experience-Sampling Diary (cont.)

4. Were you interrupted (besides by the beeper) while performing this activity? ___ Yes ____ No

IF YES

What was the cause of this interruption? (check one)
___Phone call/pager/etc.
___Person interrupted you
___E-mail

What was the interruption related to?
__ Family-related activity or demand
__ Personal/leisure activity (e.g., with friends, hobby,etc.)
__ Job-related activity or demand
__Other (specify: _____)

	not much				a lot
How much attention did or would have it required?	1	2	3	4	5
How urgent was it?	1	2	3	4	5
Overall, how demanding was it?	1	2	3	4	5

Which best describes how you handled the interruption?
___I continued my main task and put the interruption aside
___I stopped work on the main task, leaving it unfinished, and attended to the new task.
___I attempted/am attempting to juggle both tasks somewhat simultaneously.
___I did not need to do anything particular in response to the interruption

How effectively did you handle the interruption?

1	2	3	4	5	6	7
very poorly						very well

NOW CONTINUE WITH # 5

Experience-Sampling Diary (cont.)

	not very much				a lot
5. How much attention did/does the main activity require?	1	2	3	4	5
6. How urgent is/was the main activity?	1	2	3	4	5
7. *Overall*, how demanding was/is the main activity?	1	2	3	4	5
8. How efficient are/were you while working on the main activity?	1	2	3	4	5
9. How happy are you with your progress on the main activity?	1	2	3	4	5

10. While working on this main activity or task, did you think of any of the following? Check all that apply.
___ unfinished job task
___ upcoming job task or event
___ recent positive job event
___ recent negative or upsetting job event
___ unfinished family task
___ upcoming family task or event
___ recent positive family event
___ recent negative or upsetting family event
___ recent leisure activity
___ upcoming leisure activity

Appendix I

End-of-Day Diary

DATE:_____ Day of Week (circle): S M T W Th F Sa Time of day: _____

Work Interrupting Family and Family Interrupting Work

1. How often did job-related tasks or activities interrupt your family activities **today**? 1 2 3 4 5 6 7 (Never ... Very often)
2. How often did your homelife interfere with your responsibilities at work **today**? 1 2 3 4 5 6 7 (Never ... Very often)
3. How often did you end up using time at work for family-related tasks **today**? 1 2 3 4 5 6 7 (Never ... Very often)
4. How often did you end up using time usually reserved for family for work tasks instead **today**? 1 2 3 4 5 6 7 (Never ... Very often)

Family Goal Progress

5. How much progress did you make towards family goals **today**? 1 2 3 4 5 6 7 (None ... A lot)

Work Goal Progress

6. How much progress did you make towards work goals **today**? 1 2 3 4 5 6 7 (None ... A lot)

Work Satisfaction

7. How satisfied were you with your work tasks or projects **today**? 1 2 3 4 5 6 7 (Not at all ... Very satisfied)
8. How satisfied were you with your coworkers **today**? 1 2 3 4 5 6 7 (Not at all ... Very satisfied)
9. How satisfied were you with your supervisor **today**? 1 2 3 4 5 6 7 (Not at all ... Very satisfied)
10. Please draw a circle around the face that best expresses **how you feel, in general, about your job <u>today</u>**, including the work, the supervision, and the people you work with:

Family Satisfaction

11. How satisfied were you with your family tasks or projects **today**? 1 2 3 4 5 6 7 (Not at all ... Very satisfied)
12. How satisfied were you with your partner (if applicable) **today**? 1 2 3 4 5 6 7 (Not at all ... Very satisfied)
13. How satisfied were you with your child(ren) (if applicable) **today**? 1 2 3 4 5 6 7 (Not at all ... Very satisfied)

End-of-Day Diary (cont.)

14.Please draw a circle around the face that best expresses **how you feel, in general, about your family role(s) today**, including your family members and family tasks or projects:

Vitality

15. Please indicate the extent to which each of the following items describe how you ***currently*** feel using the following scale:

	1	2	3	4	5	6	7
	Not at all						Very true
I feel alive and vital.	1	2	3	4	5	6	7
I don't feel very energetic.	1	2	3	4	5	6	7
I feel so alive I just want to burst.	1	2	3	4	5	6	7
I have energy and spirit.	1	2	3	4	5	6	7
I look forward to each new day.	1	2	3	4	5	6	7
I feel awake and alert.	1	2	3	4	5	6	7
I feel energized.	1	2	3	4	5	6	7

Work-Family Juggling

	1	2	3	4	5	6	7
16. To what extent did you feel that you had to juggle work and family tasks at the same time **today**?	Not at all						Very true

Work-family Separation

	1	2	3	4	5	6	7
17. To what extent were you able to keep work and family tasks separate today?	Not at all						Very true