CAN WE REALLY HAVE IT ALL? INVESTIGATING THE EFFECTS OF ROLE

INTEGRATION AND ROLE POLYCHRONICITY FOR INDIVIDUALS HIGHLY

INVOLVED IN WORK AND NONWORK DOMAINS

by

MARCUS MELVIN BUTTS

(Under the Direction of Lillian T. Eby)

ABSTRACT

Although it is often viewed as a common phenomenon in the workforce today, the dynamics of high involvement in both work and nonwork domains has seldom been empirically investigated. Adopting tenets of boundary theory, this study examined the effects of role integration on important work-nonwork outcomes for individuals with high involvement in work and nonwork roles. Although quite a few relationships were opposite of predictions, many role integration facets were related to work-nonwork conflict and positive spillover. Furthermore, individual preferences for focusing on work and nonwork tasks simultaneously (i.e., *role polychronicity*) moderated some of these relationships. The form of these moderator effects highlights the need for congruence between role integration and role polychronicity in order for individuals to lessen conflict and increase positive spillover. Implications of these findings and suggestions for future work-nonwork research are also discussed.

INDEX WORDS: Work-nonwork conflict, Work-nonwork positive spillover, role involvement, role integration, role polychronicity

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DEDICATION

This work is dedicated to my father, Melvin Truman Butts. Unfortunately, his time on this earth was cut short before seeing my hard work and commitment come to fruition. However, without his love and support, I would not have been able to accomplish this feat. Furthermore, I would not be the person I am today if it were not for my father's role modeling and influence. Dad, you were always understanding and kind-hearted with me. I hope to one day be as good a father to my children as you were to me. You are missed dearly, but your memory and spirit lives on in the hearts of your family and friends.

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CHAPTER 1

INTRODUCTION

"What's wrong with me? Why can't I do it all? Why can't I juggle? Others seem to manage. Why can't I?"

- Naomi (Crosby, 1991 p. 3)

As evident from the opening quote, the attempt to successfully manage involvement in multiple life domains is often a difficult one. While this is a phenomenon viewed as commonplace for employees in today's workforce, research has seldom focused on individuals simultaneously engaged in both their work and nonwork roles and attempting to "have it all." Traditionally, these "role jugglers" (i.e., individuals displaying high involvement in multiple life domains) envision successfully managing both their career and nonwork responsibilities rather than making tradeoffs between the two domains (Greenhaus & Parasuraman, 1999; Peake & Harris, 2002). Young people today have also joined the fray into role juggling by emphasizing achievement of balance between work and nonwork more so than generations in the past (Snir & Harpaz, 2002). Therefore, understanding the dynamics of high involvement in multiple roles is an important concern applicable to many employee contingents—young and old as well as married and single.

There are few theoretical explanations to help understand the outcomes associated with being highly involved in multiple roles. Typically, individuals who are highly involved in both work and nonwork roles are not investigated separately from those with differential involvement (for an exception see Greenhaus, Collins, & Shaw, 2003). Furthermore, there has been little investigation of the importance placed on roles other than work and family (Eby, Casper,

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Lockwood, Bordeaux, & Brinley, 2005; Parker & Hall, 1992). In light of these facts, there is a need for investigating antecedents and consequences within the context of high multiple role involvement, particularly across the totality of individuals' work and nonwork lives (i.e., beyond just family).

As noted by numerous articles over the past two decades (e.g., Glass & Estes, 1997; Hall & Ricther, 1988; Rau & Hyland, 2002), employees and organizations are constantly championing the integration of work and nonwork roles through such remedies as telecommuting, flextime, child-care services, and on-site recreational facilities. Meanwhile, advances in technology (i.e., the internet, e-mail, Blackberries, cell phones) have enabled people to complete work tasks from almost anywhere in the world. To illustrate, a study conducted in 2002 by the Families and Work Institute found that over one-third of employees surveyed use a computer at home for job-related work. This constant availability of information from the office has obscured the boundaries between work and nonwork, causing a growing number of employees to conduct work-related activities in the time or space that was formerly restricted to nonwork activities. While the popular press has applauded these organizational attempts at integration, some researchers question whether these actions actually mitigate or perhaps exacerbate conflict between work and nonwork (Ashforth, Kreiner, & Fugate, 2000; Hall & Richter, 1988; Hill, Miller, Weiner, & Colihan, 1998).

The shift towards integration of work and nonwork is especially important for role jugglers, as they are more likely to participate in practices that allow them to attend to their multitude of role obligations and are likely to experience the most challenge in navigating between work and nonwork demands. However, theory and research on role integration—the extent to which the work (nonwork) domain overlaps with or infringes upon the nonwork (work)

domain—is just beginning to accumulate (e.g., Ashforth et al., 2000; Clark, 2000; Kossesk, Lautsch, & Eaton, 2005), and its effects on important work-nonwork outcomes such as conflict and positive spillover are relatively unknown. Possible interactions between individual differences and role integration have also gone uninvestigated. This latter omission is important because personal attributes may dictate the successful or unsuccessful integration of demands from work and nonwork roles.

The primary purpose of the current study is to utilize role integration theory to present a framework for understanding the dynamics of the work-nonwork interface for individuals highly involved in both work and nonwork domains. The level of integration between work and nonwork roles is depicted as having both favorable and unfavorable effects. Moreover, role integration theory is extended by suggesting that individual differences in preferences to simultaneously focus on tasks from multiple roles (i.e., role polychronicity) influence the degree to which role integration determines positive or negative work-nonwork outcomes. Secondarily, competing conceptualizations of role involvement are investigated since both behavioral-based and psychological-based operationalizations have been examined in previous research on role involvement.

CHAPTER 2

WORK AND NONWORK ROLES

Role Involvement

In the work-family literature, it is generally accepted that involvement in one life role

places constraints on involvement in another life role. Because it is viewed as a fixed resource,

time spent in one role (behavioral involvement) cannot be allocated to another role (Greenhaus &

Beutell, 1985). It has also been suggested that the psychological preoccupation with a role

(psychological involvement) interferes with involvement in another role (Kanter, 1977; Small &

Riley, 1990).

While the majority of work-family research focuses on the predominant belief that high

involvement in one role precludes equally high involvement in another role, there is some

empirical evidence to the contrary (e.g., Adams, King, & King, 1996; Frone, Russell, & Cooper,

1992a; Gutek, Searle, & Klepa, 1991). This makes intuitive sense; some individuals appear to be

"acrobats" (Hall, 2002, p. 240) such that they try to do well in all role areas—succeeding at

work, being an involved parent, and being a supportive and loving spouse.

Based on the idea that interrole conflict is intensified when either work or family roles

are designated most important to the person's self-concept, most theoretical and empirical

research has focused on *either* the relationship between involvement attributed to work and

subsequent work-family conflict *or* involvement attributed to family and resulting work-family

conflict. This separatist approach to studying role involvement ignores the documented existence

of persons that attribute high involvement to both work and family (e.g., Cinamon & Rich, 2002;

Friedmen & Greenhaus, 2000). This is an important omission because an individual who has

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high involvement in both roles is unlikely to experience the same interrole conflict as an individual who has high involvement in their work role and low involvement in their family role, or vice versa.

Expanding Beyond the Family Role

It has long been accepted that social roles serve an important function in people's lives and may contribute to positive and/or negative affective outcomes (Katz & Kahn, 1978). The two most distinctive social roles in an individual's life consist of work and nonwork (Rice, McFarlin, Hunt, & Near, 1985), but several subdomains of the nonwork role also exist (e.g., family, leisure, community). As shown in Figure 1, the subdomains of the nonwork role may overlap with one another to varying degrees, and they can also have differential relationships with the work role (Ashforth, 2001). Because individual nonwork pursuits can differ drastically and a variety of nonwork roles are accessible to everyone, theories such as social identity theory (SIT) (c.f., Stryker, 1968; Tajfel & Turner, 1985) and Super's (1980; 1990) life-span, life-space theory emphasize the importance of a multi-dimensional and concurrent examination of all the social roles an individual occupies during a specific time frame in order to understand the intersection between social roles and associated outcomes.

While the importance of adopting an expansive view of the work and nonwork domain has been acknowledged (e.g., Hart, 1999; Near, Rice, & Hunt, 1980; Parker & Hall, 1992), most empirical research on the work-nonwork interface conceptualizes nonwork solely as the family role (e.g., Betz, & O'Connell, 1989; Frye & Breaugh, 2004; Kopelman, Greenhaus, & Connolly, 1983). To contrast this parochial approach to studying nonwork roles, the current study adopts a broader conceptualization of the nonwork domain as suggested by recent authors (Frone, 2003;

Greenhaus et al., 2003) such that it is not only restricted to involvement in family roles but also includes leisure and community roles as well as other nonwork roles (i.e., religion and self-development).

CHAPTER 3

WORK-NONWORK CONFLICT AND POSITIVE SPILLOVER

The majority of research exploring the links between involvement in work and family domains has adopted a conflict perspective stemming from research on resource drain (Edwards & Rothbard, 2000). Originating from the *scarcity hypothesis* (Goode, 1960), this perspective assumes that individuals have a limited supply of time and energy. Therefore, occupying multiple roles inevitably leads to strain and diminished functioning resulting from conflicting demands between roles. The term "work-nonwork conflict" is adopted here to refer to this concept and parallel the extant literature on work-family conflict.

Greenhaus and Beutell (1985) initially identified three forms of work-family (work-nonwork) conflict that occur between roles (i.e., time-based, strain-based, and behavior-based). However, the current study focuses solely on time-based and strain-based conflict because these two domains share common predictors typically investigated in the work-family literature (e.g., role demands, role stress), which are seldom linked to behavior-based conflict (Carlson, Kacmar, & Williams, 2000). *Time-based conflict* arises when time pressures associated with one role make it difficult to meet demands from another role. *Strain-based conflict* occurs when exposure to stress in one role leads to strain which inhibits the ability to perform in another role. Also, research has established work-family conflict as a bi-directional phenomenon (Frone et al., 1992a; Mesmer-Magnus & Viswesvaran, 2005) with domain-specific causes (Adams et al., 1996; Frone et al., 1992a; 1992b). In other words, aspects of the work domain may interfere with family (i.e., work-to-family), while aspects of the family domain may interfere with work (i.e., family-to-work).

In contrast to the scarcity hypothesis, the enrichment perspective (Carlson, Kacmar, Wayne, & Grzywacz, 2006; Greenhaus & Powell, 2006; Rothbard, 2001), which originates from the *expansion hypothesis* (Barnett & Baruch, 1985; Marks, 1977), suggests that involvement in multiple roles can have positive effects by providing benefits and resources to individuals rather than draining them. According to Marks (1977) and Sieber (1974), time and resources are expandable and can be shared or integrated across multiple domains. This perspective suggests that involvement in one role might actually generate resources and skills that are then available for use in another role (Marks, 1977; Marks & MacDermid, 1996). Various constructs such as role accumulation (Voydanoff, 2001), facilitation (Grzywacz & Butler, 2005; Wayne, Musisca, & Fleeson, 2004), and positive spillover (Crouter, 1984; Grzywacz, 2000; Hanson, Hammer, & Colton, 2006) have all been used to describe benefits gained from participating in multiple roles. While all three terms fall under the rubric of the enrichment perspective, this current study adopts the positive spillover perspective and terminology (i.e., "work-nonwork positive spillover") because it primarily focuses on the transfer of personal characteristics (i.e., personal gains) from one role to another through affect, values, skills, and behaviors (Edwards & Rothbard, 2000; Hanson et al., 2006) rather than the transfer of more materialistic gains that is that is incorporated into other perspectives (i.e., facilitation).

Hanson et al. (2006) describe two paths (i.e., instrumental and affective) by which resources are transferred from one role to another. *Instrumental positive spillover* occurs when a resource is transferred directly from one role to another, resulting in increased functioning in the receiving domain. Positive spillover of skills, behaviors (*behavior-based instrumental spillover*), and values (*value-based instrumental spillover*) occur through this path. *Affective positive spillover* is said to occur indirectly such that a resource in one role promotes positive affect in

that role, which then increases functioning in another role and leads to positive affect in that other role. Examples of positive affect that may be transferred indirectly across roles include excitement, enthusiasm, and happiness (Williams & Alliger, 1994). Validating the importance of directionality in work-nonwork research, positive spillover has also been defined as bi-directional in nature (Frone, 2003; Grzywacz & Butler, 2005; Grzywacz & Marks, 2000).

Recently, researchers have called for simultaneous examination of both the potential negative (e.g., conflict) and positive (e.g., positive spillover) outcomes of multiple role involvement (Barnett & Hyde, 2001; Byron, 2005; Greenhaus & Parasuraman, 1999). Because conflict and positive spillover can occur with involvement in multiple roles, a theoretical integration of the determinants of work-nonwork conflict and positive spillover is needed to expand our understanding of role jugglers—those individuals highly involved in multiple roles. Focusing solely on conflict or positive spillover provides an incomplete understanding of the work-nonwork interface (Frone, 2003). Integrating the two perspectives should lead to a more complete and dynamic understanding of the work-nonwork interface. As shown in Figure 2, the current study proposes that two important determinants of whether high involvement in multiple roles is related to positive and negative outcomes are role integration and role polychronicity.

CHAPTER 4

ROLE INTEGRATION

An emerging body of work focusing on the ways employees integrate and segment the boundaries between work and nonwork roles, recently coined *boundary theory* (Ashforth, et al., 2000), provides a useful framework for understanding the outcomes associated with managing multiple roles and is particularly relevant for individuals exhibiting high involvement across domains (Desrochers, Hilton, & Larwood, 2005). Ashforth's framework, which coincided with Clark's (2000) conceptually analogous work on *border theory*, refined early work by Nipper-Eng (1996) and focused its scope more tightly on role transitions (i.e., entering and exiting a role) and the associated costs and benefits of integrating multiple roles.

According to boundary theory, the process of mentally and/or physically transitioning from one role to another can be easy and inconsequential or difficult and taxing depending upon the *magnitude* and *frequency* of the transition. The primary determinant of the magnitude and frequency of transitions between roles is the level of demarcation between roles—thin demarcation equates to small magnitude and higher frequency of transitions while thick demarcation is defined by large magnitude and lower frequency of transitions between roles. In an attempt to simplify and organize their environment, individuals erect mental fences (i.e., boundaries) around geographic regions, people, and ideas that are perceived as contiguous, functionally related, similar, or otherwise associated (Ashforth, 2001; Michaelsen & Johnson, 1997; Nippert-Eng, 1996; Zerubavel, 1991). In this respect, boundaries are somewhat idiosyncratically constructed (e.g., one employee may allow leisure to cross over into work while another keeps the two domains separate) (Ashforth, 2001; Nippert-Eng, 1996). However,

boundaries may also be institutionalized by a specific role. For example, the boundary around an individual's work role is based on some elements outside an individual's control such as the availability of flexible work schedules and organizational policies regarding telecommuting. Therefore, individual boundary management can be viewed in part as an individual's active strategy to maintain a boundary between roles and partly the objective characteristics of two roles (Ashforth et al., 2000; Edwards & Rothbard, 2000; Kossek, Lautsch, & Eaton, 2005).

Based on the boundaries constructed and the underlying similarities or differences between roles, a pair of roles exists on a continuum ranging from high integration at one end to high segmentation at the opposite end (Ashforth et al., 2000). Boundary theory stipulates that role integration-segmentation is dictated by three main components: boundary flexibility, boundary permeability, and identity (dis)similarity (Ashforth et al., 2000). The extent to which two roles have highly flexible boundaries, highly permeable boundaries, and high identity similarity, they are said to be integrated.

Boundary Flexibility

Boundary flexibility is the degree to which a role's spatial and/or temporal boundaries are malleable (Ashforth et al., 2000; Hall & Ricter, 1988). For example, a surgeon may have the latitude to be on call from home during hours he or she chooses, and thus have a flexible work boundary in respect to location (e.g., working from home) and time (e.g., choosing a preferred work schedule). In contrast, inflexible boundaries are constrained by time and place in which they may be enacted. An individual who works as a security guard typically performs his/her duties on location and follows as set work schedule every week. Therefore, there is little flexibility in where and when a security guard may carry out work responsibilities. Conceptually, boundary flexibility is bi-directional such that the work boundary may be highly flexible whereas

the nonwork boundary is not, or vice versa. By definition, a flexible work (nonwork) boundary allows an individual freedom to complete work (nonwork) in a way that takes into consideration demands of nonwork (work). Thus, nonwork (work) is being *integrated* into work (nonwork) because it is allowed to infringe on the work (nonwork) domain. Intuitively, work flexibility should be positively associated with nonwork-to-work conflict and positive spillover because the nonwork role is being allowed to take priority over the work role when necessary. Similarly, it is possible that as nonwork flexibility increases so does work-to-nonwork conflict and positive spillover.

As noted by Ashforth et al. (2000), there are both benefits and costs of boundary flexibility. As the boundary around a role becomes more flexible, transitions to and from that role occur more easily (Ashforth, 2001). In other words, the magnitude of transition is small and thus easier to accomplish. Therefore, boundary flexibility can be beneficial. Because the magnitude of transitions to and from roles is small, positive emotions and work interaction styles from one role are more likely to carry over to the other role. For example, a counselor who works out of her home may experience a breakthrough with a patient that puts her in a positive mood. Because of temporal and spatial proximity, that positive mood may carry over into nonwork interactions with family members. In this way, high boundary flexibility may enhance positive spillover between work and nonwork domains.

The primary cost of small magnitude transitions for the individual is the increased likelihood that the two domains will become "blurred" (Ashforth et al., 2000; Desrochers et al., 2005). Specifically, as boundary flexibility increases and transitions are made easier, confusion may arise as to which role identity and role expectations to attend to, creating role conflict. For example, an individual who brings work home from the office to complete in the evening has the

added burden of meeting nonwork demands (e.g., attending planned leisure activities) while simultaneously trying to fulfill work responsibilities. Thus, high boundary flexibility also has the potential to lead to conflict between the work and nonwork domains.

Boundary Permeability

According to Clark (2002), permeability refers to a lack of control over one domain invading the other. Thus, boundary permeability is the extent to which a role allows an individual to be physically present in one role, but allows psychological intrusions (e.g., worrying about a sick child while at work) or intrusions that are behavioral in nature (e.g., a colleague from work visiting at home) from the other domain (Ashforth, 2001; Ashforth et al., 2000; Clark, 2000, Hall & Richter, 1988; Nippert-Eng, 1996).

Boundary permeability is conceptually and empirically distinct from boundary flexibility (Clark, 2002; Matthews & Barnes-Farrell, 2004). While boundary flexibility centers on the ease of enacting a role at various times and places, boundary permeability focuses on the experienced intrusion from a different role than the one that is currently enacted. To further clarify this distinction, consider a situation where an individual's work role may be highly flexible such that s/he is free to schedule his/her own hours and leave work at any time to take care of nonwork responsibilities. However, his/her work role may display a low level of permeability because the individual does not permit nonwork-related phone calls or visits from nonwork contacts.

Like boundary flexibility, boundary permeability is also bi-directional in nature. The work role may be permeable such that an employee frequently accepts phone calls from a spouse while at work, and the nonwork role may be permeable because the employee cannot stop thinking about work while at the gym or other places (e.g., church). Moreover, work

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permeability should be associated with nonwork-to-work outcomes, while nonwork permeability should be most relevant to work-to-nonwork outcomes.

In many regards, boundary permeability epitomizes interrole conflict because an individual is called on to attend to demands from one role while simultaneously operating in another role (Hall & Richter, 1988). As boundary permeability increases, the transitions from one role to the other may occur frequently due to behavioral and cognitive distractions from the other domain, thus creating role conflict. However, boundary permeability also has potential benefits. The unobstructed, frequent, and small magnitude transitions between the work and nonwork roles may increase the ease with which behaviors utilized in one role can be applied to the other role. Therefore, boundary permeability also has the potential to enhance positive spillover between work and nonwork roles.

Identity Similarity

The third and final aspect of role integration is identity similarity across roles. This is the extent to which two role identities are similar in terms of core and peripheral features of each role (Ashforth et al., 2000). A large body of work is subsumed under the general rubric of identity (e.g., Brewer, 1991; Burke, 1991; Thoits, 1991). The focus in the current study is on role identity as generally ascribed to by social identity theory (SIT) (Tajfel & Turner, 1985). According to SIT, an individual's self concept is defined as a social construction whereby various cues signal group occupancy to an individual. Thus, role identities can be viewed as conceptions of one's self that are the manifestations that arise from the social groups an individual occupies. In this way, an individual's role identity is signified by a *personal identity* that characterizes the person within the role and a *social identity* that categorizes the role with an associated category of people (Ashforth, 2001). Consistent with SIT, the current study focuses on

similarity in personal identity features associated with interaction style (Einspahr, 2003), values, beliefs, attitudes (Miller, 2000), and social identity features defined by similarity in social groups.

Low similarity in role identities increases the magnitude of transitions between roles (Ashforth et al., 2000) and allows individuals to more easily psychologically compartmentalize their roles as self-contained and distinct identities that represent specific goals, norms, values, and role members (Ashforth, 2001; Ashforth & Mael, 1989). Previous studies (e.g., Settles, Sellers, & Damas, 2002) show that by viewing two role identities as separate and dissimilar, the stressful experiences in one role are buffered from the other role. Conversely, high similarity between role identities may lead to increased role conflict.

Identity similarity is also potentially rewarding. Studies show that synergies occur across roles through the transfer of skills and knowledge (e.g., Ruderman, Ohlott, Panzer, & King, 2002). However, the usefulness of particular behaviors to multiple roles likely depends on the relevance across domains. To illustrate, Greenhaus and Powell (2006) give the example of a parent who regards both work *and* family roles as entailing nurturance (i.e., high identity similarity), and therefore is more likely to view a particular communication style learned in the workplace as applicable to the family role. Likewise, when there is high identity similarity between roles, the cognitive decoupling necessary to move from role to role is minimized because transitions are smaller in magnitude. Therefore, high similarity in role identities may increase positive spillover between roles.

Role Integration as a Multidimensional Predictor of Work-Nonwork Outcomes

The three components of role integration (boundary flexibility, boundary permeability, identity similarity) can be conceptualized as interrelated dimensions of a higher-order construct

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representing general role integration (Ashforth, 2001; Ashforth et al., 2000). To help clarify the

conceptualization of different facets of role integration for both work and nonwork, summaries

and examples are provided in Table 1. As suggested in Table 1, integrated roles are not tied to

specific places or times (flexible boundary), allow cross-role interruptions (permeable boundary)

and are weakly differentiated (similar identity). On the one hand, integrated roles make

transitions between roles less difficult, but on the other hand they also confound the expectations

of multiple roles and increase the chance of role blurring as well as cross-role distractions.

Therefore, segmented roles are generally more easily maintained and compartmentalized, but

they also provide few opportunities for positive exchanges across roles.

Applying the theoretical tenets of role integration to work-nonwork conflict, it is believed

that role integration has a positive effect on domain-specific time-based and strain-based work-

nonwork conflict. As role integration increases, individuals are inundated with simultaneous

demands from multiple roles as a result of almost nonexistent role boundaries (boundary

flexibility), cross-role interruptions (boundary permeability), and similarity in role characteristics

(identity similarity). As a consequence, attention devoted across roles leads to process loss in

time allocation as well as generalized stress and anxiety experienced across both roles. This

reasoning leads to the first set of hypotheses:

> *Hypothesis 1a. Work-to-nonwork role integration (nonwork flexibility, nonwork permeability, identity similarity) will be positively related to time-based and strain-based work-to-nonwork conflict.*

> *Hypothesis 1b. Nonwork-to-work role integration (work flexibility, work permeability, identity similarity) will be positively related to time-based and strain-based nonwork-to-work conflict.*

An important advantage of role integration is that the transition between roles is easier

(Ashforth, 2001). This, coupled with similarity in identities and overlap in role boundaries,

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increases the likelihood that productive behaviors, values, and attitudes will spillover from one

role to the other. This rationale leads to the next set of domain-specific hypotheses:

> *Hypothesis 2a. Work-to-nonwork role integration (nonwork flexibility, nonwork permeability, identity similarity) will be positively related to work-to-nonwork positive spillover (behavior-based instrumental, value-based instrumental, affective).*

> *Hypothesis 2b. Nonwork-to-work role integration (work flexibility, work permeability, identity similarity) will be positively related to nonwork-to-work positive spillover (behavior-based instrumental, value-based instrumental, affective).*

Hanson et al. (2006) suggested that instrumental positive spillover is a primary type of

domain enrichment while affective positive spillover is a secondary type of enrichment. Because

the instrumental path allows for behaviors and values to be directly (versus indirectly) applied

from one role to another, it is expected that there will be a stronger effect for this type of

spillover. Stated as domain-specific hypotheses:

> *Hypothesis 3a. Work-to-nonwork role integration (nonwork flexibility, nonwork permeability, identity similarity) will have a stronger effect on work-to-nonwork instrumental positive spillover (behavior-based, value-based) than affective positive spillover.*

> *Hypothesis 3b. Nonwork-to-work role integration (work flexibility, work permeability, identity similarity) will have a stronger effect on nonwork-to-work instrumental positive spillover (behavior-based, value-based) than affective positive spillover.*

CHAPTER 5

ROLE POLYCHRONICITY

The role of individual differences in the way people manage work and nonwork domains

has been discussed as important in the literature, but has largely been ignored (Byron, 2005; Eby

et al., 2005; Sumer & Knight, 2001). Relevant to boundary theory, Chesley (2005) suggested that

role integration is not the only factor that shapes work-family outcomes; perhaps an individual's

style of managing the information that passes through the role boundaries shapes subsequent

experiences. Consistent with research on person-environment fit (Edwards & Rothbard, 1999;

Kreiner, 2006), Ashforth (2001) suggested that interpretation of the transition process between

roles likely depends on the interaction of person and situation. Expanding upon this idea, the

extent to which role integration determines work-nonwork outcomes may be influenced by

individual differences.

Possible differences in the usefulness of role integration can be explained by adapting a

term from the time management literature called *polychronicity* (Hall, 1981). This refers to the

extent to which people prefer to be engaged in two or more tasks or events simultaneously and

believe their preference is the best way to do things (Bluedorn, Kalliath, Strube, & Martin,

1999). Polychronicity is viewed on a continuum, and preferences exist by degree of engagement

in multiple activities or tasks (Bluedorn, 2002). At one extreme is the pattern of focusing on one

task at a time (monochronicity) and interpreting other potential tasks as interruptions that must

be shielded against to lessen interference. At the other extreme, engagement is open-ended

(polychronicity). Multiple tasks are performed simultaneously, sometimes literally

simultaneously and at other times in a frequent back-and-forth pattern. People who are more

monochronic see unplanned, unscheduled tasks as interruptions that will possibly interfere with planned tasks. Polychronic individuals, on the other hand, treat unscheduled tasks as a normal part of life and deal with them in the same manner as they would planned tasks (Bluedorn, Kaufman, & Lane, 1992).

Research on polychronicity has typically been restricted to work activities in organizations (and thus restricted to the work role). Research has found that polychronicity at work is negatively related to role overload (Kaufman, Lane, & Lindquist, 1991) and job stress (Bluedorn, 2002). Schein (1992) even suggested that polychronic workers may be best suited for work in startup companies due to the lack of structure and concrete standards present, whereas monochronic workers might fit best in more bureaucratic organizations. The current study proposes that the concept of polychronicity can also be extended to responsibilities across work and nonwork roles.

Polychronicity, here after referred to as *role polychronicity*, is applicable to role integration if one considers polychronicity in broader terms. First, the various tasks engaged in at work parallel the various roles that an individual may focus on during a given day. Second, role integration often necessitates both a concurrent performance of multiple roles (e.g., talking to your children on the phone while at work) and a back-and-forth engagement pattern over a short period of time (e.g., doing project work at home before taking children to school and then going to work). Therefore, applied to the work and nonwork domains, role polychronicity is defined here as the extent to which a person is predisposed to be engaged in *both* work and nonwork tasks simultaneously (or over a short period of time) and feels this is the best way to successfully manage multiple roles.

Regarding work-nonwork conflict, the extent to which individuals prefer to simultaneously focus on tasks from multiple roles may allow them to more readily deal with conflicting time demands and stress-inducing episodes that can accompany high role integration. Possessing a high level of role polychronicity should allow individuals to more successfully deal with the ambiguity of role blurring that occurs under conditions of high role integration and cognitively decouple from roles more effectively in order to smoothly transition back and forth across role domains. Therefore, role polychronicity should mitigate the possible negative effects of role integration on work-nonwork conflict. Stated as domain-specific hypotheses:

> *Hypothesis 4a. Role polychronicity will moderate the relationship between work-to-nonwork role integration (nonwork flexibility, nonwork permeability, identity similarity) and time-based and strain-based work-to-nonwork conflict such that the higher the role polychronicity, the weaker the relationship between work-to-nonwork role integration and time-based and stain-based work-to-nonwork conflict.*

> *Hypothesis 4b. Role polychronicity will moderate the relationship between nonwork-to-work role integration (work flexibility, work permeability, identity similarity) and time-based and strain-based nonwork-to-work conflict such that the higher the role polychronicity, the weaker the relationship between nonwork-to-work role integration and time-based and stain-based nonwork-to-work conflict.*

Since positive spillover represents an ability to transfer personal resources across roles, a different moderating effect for role polychronicity is expected. Specifically, under high role integration, a high role polychronicity should increase the likelihood that behaviors, values, and attitudes experienced in one role will have a positive effect on the other role. In essence, the transition process between roles becomes almost nonexistent because the individual views integrated cross-role demands as welcomed opportunities to share resources across domains. This rationale leads to the next set of domain-specific hypotheses:

> *Hypothesis 5a. Role polychronicity will moderate the relationship between work-to-nonwork role integration (nonwork flexibility, nonwork permeability, identity similarity) and work-to-nonwork positive spillover (behavior-based instrumental, value-based instrumental, affective) such that the higher the role polychronicity, the stronger the*

relationship between work-to-nonwork role integration and work-to-nonwork positive spillover.

Hypothesis 5b. Role polychronicity will moderate the relationship between nonwork-to-work role integration (work flexibility, work permeability, identity similarity) and nonwork-to-work positive spillover (behavior-based instrumental, value-based instrumental, affective) such that the higher the role polychronicity, the stronger the relationship between nonwork-to-work role integration nonwork-to-work positive spillover.

CHAPTER 6

DIFFERENTIATING PROFILES AND CONCEPTUALIZATIONS OF

ROLE INVOLVEMENT

Profiles of Role Involvement

An important assumption underlying the premise of this study is that role integration is

most applicable to individuals highly involved in both work and nonwork domains. Role

integration should be of less importance for individuals displaying differential involvement in

work and nonwork because under those circumstances the most salient role, rather than role

integration, should drive outcomes. Therefore, the pattern of relationships proposed in

Hypotheses 1-5 should receive less support for all profiles of work-nonwork involvement (i.e.,

high/low, low/high, low/low) other than high/high. This leads to the following hypothesis:

> *Hypothesis 6. The proposed hypotheses for role integration and role polychronicity will*
> *receive stronger support in groupings of high work/high nonwork involvement*
> *participants than any other groupings of work-nonwork involvement (i.e., high/low,*
> *low/high, low/low).*

Conceptualizations of Role Involvement

Role involvement is typically conceptualized as either behavioral or psychological

(Carlson & Frone, 2003; Frone, 2003; Super, 1990). Behavioral role involvement refers to the

amount of time one devotes to role activities and responsibilities. Typical indicators of

behavioral involvement include hours worked, time spent on parenting, and time devoted to

household chores (e.g., Frone, Yardley, & Markel, 1997; Grzywacz & Marks, 2000; O'Driscoll,

Ilgen, & Hildreth, 1992). Psychological role involvement is defined as a cognitive construct

representing the level of importance attached to a particular role or the salience of the role to an

individual's self-concept. Frequently studied indicators of psychological involvement include

job involvement, career involvement, work role salience, work commitment, and family

involvement (e.g., Carlson & Kacmar, 2000; Greenhaus & Parasuraman, 1999).

The preponderance of research on work-nonwork conflict has relied heavily upon

behavioral-based involvement measures (i.e., hours worked per week) as the primary

independent variable (Thompson & Bunderson, 2001). Less often is the psychological

perception of involvement investigated. Typically, the higher the psychological importance

placed on a particular role, the more time and effort invested in that role (Burke & Reitzes, 1991;

Lobel & St. Clair, 1992; Stryker & Serpe, 1994). However, in some studies behavioral

involvement and psychological involvement have not been highly correlated (i.e., Carlson &

Frone, 2003), and some scholars argue that psychological involvement is the primary

determinant of work-nonwork conflict (e.g., Baruch & Barnett, 1987). Therefore, high

psychological involvement in both work and nonwork may not be synonymous with equally high

time investment in both work and nonwork.

The questions surrounding behavioral and psychological role involvement cannot be

easily answered. However, in an effort to increase our understanding of the differences between

the two types of involvement, the current study proposes competing hypotheses in order to

empirically examine the differential applicability of behavioral and psychological involvement

within the context of multiple role involvement. This leads to the final set of competing

hypotheses:

> *Hypothesis 7a. The role integration main effects and role polychronicity moderation*
> *effects will have a stronger relationship with work-nonwork conflict and positive*
> *spillover for the high work/high nonwork behavioral role involvement group than the*
> *high work/high nonwork psychological role involvement group.*

Hypothesis 7b. The role integration main effects and role polychronicity moderation effects will have a stronger relationship with work-nonwork conflict and positive spillover for the high work/high nonwork psychological role involvement group than the high work/high nonwork behavioral role involvement group.

To summarize, the present study examines the impact of role integration on work-nonwork outcomes and the possible moderating effects of role polychronicity for individuals highly involved in work and nonwork domains. A summary of all hypotheses and underlying objectives is provided in Table 2.

CHAPTER 7

METHOD

Participants

A power analysis was conducted following MacCallum, Browne, and Sugawara's (1996)

guidelines for power needed using the Root Mean Square Error of Approximation (RMSEA)

index based on the smallest number of degrees of freedom resulting from Rigdon's (1994)

equation for determining degrees of freedom in structural equation models. As shown in

Appendix A, a sample size of 80 was adequate to tests the study hypotheses. However, this

number represents the target sample size of participants with high involvement in both work and

nonwork domains. Because these individuals sometimes represent only about 30% of employee

samples (Friedmen & Greenhaus, 2000), the necessary sample size needed is 267 participants.

Two organizations were used as participant samples. One organization was a large

manufacturing company in the toy industry headquartered in the western United States

(Organization A). The other organization was a small southwestern United States branch of a

nonprofit organization that focuses on youth mentoring (Organization B). While these two

organizations represent different industries, they were both included in an attempt to survey

organizations with variance in policies that allow for boundary flexibility and permeability.

Data collection. Across the two organizations, 433 total surveys were completed; 345

from Organization A and 88 from Organization B. This represented a response rate of 14%

(345/2,555) for Organization A and 86% (88/102) for Organization B. ANOVA results revealed

that the two organizations differed significantly on numerous background variables ($p < .05$).

These significant differences included number of full-time salaried employees (Organization A =

70%, Organization B = 90%), organizational tenure (Organization A $\overline{X}$ = 110 months, Organization B $\overline{X}$ = 45 months) number of hours worked per week (Organization A $\overline{X}$ = 46, Organization B $\overline{X}$ = 43), salary (Organization A $\overline{X}$ = $66,826, Organization B $\overline{X}$ = $44,848), gender (Organization A = 73% female, Organization B = 86% female), age (Organization A $\overline{X}$ = 39, Organization B $\overline{X}$ = 34), and level of education (Organization A = 72% bachelors degree or higher, Organization B = 97% bachelors degree or higher). However, the two organizations also showed no significant differences on a number of background variables including supervisory responsibilities (Organization A = 73% no supervisory responsibilities, Organization B = 71% no supervisory responsibilities), race (Organization A = 75% Caucasian, Organization B = 78% Caucasian), marital status (Organization A = 68% married, Organization B = 67% married), spousal work (Organization A = 84% spouse employed outside the home, Organization B = 89% spouse employed outside the home), and paid childcare assistance (Organization A = 80% no assistance, Organization B = 81% no assistance). Because of the two samples differed on numerous background variables, organizational sample was investigated as a possible control variable.

Sample characteristics. The sample was disproportionately female (75%), Caucasian (74%), married (68%), and highly educated (75% bachelors degree or higher). Participants worked an average of 44 hours per week, had average organization tenure of 95 months, average salary was $61, 400, and an average age of 37 years. Seventy-four percent (74%) of the sample was full-time salaried employees, and most had no managerial duties (72% no supervisory responsibilities). Finally, a large majority of the sample had a spouse employed outside the home (84%) and no paid childcare assistance (80%).

Data Preparation

Part-time employees were removed from the sample. These employees were removed because part-time employees typically have less latitude over their work hours (i.e., behavioral involvement) and may have less access to organizational policies that can increase boundary flexibility (i.e., they are not given the privilege of working from home). Removing these participants resulted in a reduced sample size of 404 (Organization A = 325, Organization B = 79). The patterns of missing data (excluding single item measures) were then investigated, and surveys with 40% missing data per scale were removed from the sample. This resulted in a sample size of 377 (Organization A = 304, Organization B = 73) that was used in hypothesis testing. After deleting cases with at least 40% missing data, the amount of missing data per scale ranged from .3 to .9%, suggesting the remaining data was missing at random. Missing data for each scale were then imputed with the expectation maximization algorithm (e.g., Little & Rubin, 1987) used by the multiple imputation feature in PRELIS 8.54 (Jöreskog & Sörbom, 1993).

Procedure

Within each organization, an electronic link to a web survey was provided to participants via e-mail. However, recruitment methods varied slightly at each organization. At Organization A, an invitation to participate in the study was included in the bi-weekly electronic newsletter e-mailed to all employees at the participating locations. The invitation described the purpose of the study, timeframe, value of the project, an incentive to participate in the form of a lottery-based award, and it provided an electronic survey link (see Appendix B). The invitation was included in the regional newsletter for approximately two months. At Organization B, all employees were sent a blanket e-mail from the regional manager with an invitation to participate in the study identical to the one provided at Organization A (see Appendix B). However, at Organization B,

a reminder e-mail similar to the original invitation was also sent to employees two weeks after the original e-mail. Although it would have been preferable to utilize an e-mail recruitment method at Organization A instead of an electronic newsletter, as the former demonstrates better response rates (Dillman, 2000), privacy concerns voiced by executives at Organization A precluded such a recruitment method.

After opening the survey link, participants were presented an informed consent page before allowed to continue (see Appendix C). Participants who took part in the study then completed approximately 110 questions that took about 20-30 minutes to complete. At the end of the survey, names and contact information were collected for the sole purpose of notifying lottery winners. Participants were allowed to complete on-line surveys for approximately one month at each organization, and data collection across both organizations occurred within a 3-month time period.

Measures

Internal consistency of scales was evaluated using the total sample after removing part-time employees and participants with 40% missing values per scale (N=377); both before and after missing data was imputed. Likely due to the small percentage of missing data per scale, there were no noticeable differences in internal consistency between the "not imputed" and "imputed" data sets. Therefore, reliabilities reported below are based on the imputed data. Also, initial modifications to scales are noted below. Following scale development protocol suggested by others (Crocker & Algina, 1986; Mallard & Lance, 1998), an item was deleted if it was not internally consistent with the remaining scale items such that (a) it had a negative or near zero (i.e., <.3) corrected item-total correlation, (b) the scale variance increased by removing the item, or (c) deletion of the item resulted in an appreciable increase in coefficient alpha for the scale.

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Role involvement. Both behavioral and psychological role involvement were measured to assess participant degree of involvement in work and nonwork roles. The types of nonwork roles chosen for investigation were based on a qualitative assessment of previous studies investigating nonwork roles (i.e., Meleis, Norbeck, & Laffrey, 1989; Randall, 1988; Super, 1980). While there are certainly nonwork roles not measured in the current study, the goal was to survey the most commonly discussed nonwork roles in an attempt to expand understanding beyond just work and family, but not necessarily attempt to develop an exhaustive taxonomy of nonwork roles. Based on the findings from the literature, the roles of family, community, leisure, religion, and self-development were deemed most appropriate for inclusion as nonwork roles.

In line with previous studies (i.e., Frone et al., 1997; Grzywacz & Marks, 2000; O'Driscoll et al., 1992), *behavioral involvement* was measured by asking participants the average number of hours per week they spend on work and nonwork activities (i.e., family, community, leisure, religion, and self-development), as well as "other" activities. These items are provided in Appendix D. Total number of hours spent in all nonwork roles was summed to represent an overall score for nonwork behavioral involvement.

Psychological involvement was measured using a 5-item scale adapted from Frone, Russell, and Cooper (1995) that is derived from a popular measure of job involvement developed by Kanungo (1982). All items were measured on a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree). The items representing psychological work involvement (e.g., "Many of my interests are centered around my job") were almost analogous to the original items used by Frone et al. (1995) (e.g., "Most of my interests are centered around my job"), except items were revised to reflect a more absolute evaluation of work involvement to allow for the more realistic possibility of involvement in multiple roles ($\alpha = .81$). Psychological nonwork involvement was

measured by revising the aforementioned work involvement items to reflect the nonwork role of interest (e.g., "Many of my interests are centered around my religion") and included family involvement (α = .92), community involvement (α = .94), leisure involvement (α = .91), religious involvement (α =.97), and involvement in self-development (α = .93). In line with previous studies (e.g., Kirchmeyer, 1995), scores for involvement in nonwork roles were averaged to represent an overall score for psychological nonwork involvement. All psychological role involvement items are provided in Appendix E.

Boundary flexibility. Perceptions of boundary flexibility were assessed by a 16-item measure adapted from measures developed by Matthews and Barnes-Farrell (2004), Clark (2001), and Clark (2002). Items were revised to reflect the nonwork domain rather than family domain, and all items were measured on a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree). As shown in Appendix F, eight items represent work boundary flexibility and eight items represent nonwork boundary flexibility. Of the eight items defining work flexibility, four items originated from Matthews and Barnes-Farrell (2004) (e.g., "I arrive and depart from work when I want in order to meet my nonwork responsibilities"), and four items were derived from Clark's (2001) study (e.g., "There is a lot of flexibility in my work schedule"). The eight items representing nonwork flexibility were comprised of six items from Matthews and Barnes-Farrell's (2004) study (e.g., "When the needs arises, I work late without affecting my nonwork responsibilities") and two items adapted from Clark (2002) (e.g., "I am free to carry out my nonwork responsibilities during the hours that are best for my schedule").

Based on the aforementioned criteria for deletion, item 8 (see Appendix F) was dropped from each domain-specific boundary flexibility scale. The revised scales demonstrated

acceptable reliability for their respective domains of work flexibility ($\alpha = .83$) and nonwork

flexibility ($\alpha = .80$).

Boundary permeability. Permeability of work and nonwork roles was assessed by ten

items measured on a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree); five items

representing the permeability associated with each domain. Once again, previously worded

family domain items were revised to more appropriately represent the nonwork domain. For

permeability of the work role, three items were adapted from Clark (2002) (e.g., "I get visits

from nonwork contacts while I am at work"), one item originated from Einspahr's (2003) study

(e.g., "I bring friends from my nonwork life to my workplace"), and one item was created for the

purpose of the current study (e.g., "When completing work tasks, I have to deal with nonwork-

related interruptions"). However, the item adapted from Einspahr's (2003) study had a low item-

total correlation ($<.30$) and was subsequently discarded. The resulting 4-item coefficient alpha

was .71. Permeability of the nonwork role was comprised of three items adapted from Clark

(2002) (e.g., "I receive calls related to work when I am doing nonwork activities"), one item

modified from Einspahr's (2003) study (e.g., "I carry a work-related pager, Blackberry, or cell

phone with me so that I can be available to my job when I am doing nonwork activities"), and

one item created for the purpose of the current study (e.g., "When engaging in nonwork

activities, I have to deal with work-related interruptions"). Coefficient alpha for this 5-item scale

was .83. All boundary permeability items are provided in Appendix G.

Identity similarity. Twelve items, measured on a 5-point Likert scale (1 = Strongly

Disagree, 5 = Strongly Agree), were included to measure the extent to which the work and

nonwork roles are similar on the dimensions of interaction style, values, beliefs, attitudes, and

social identity. Four items representing interaction style were adapted from a previously

validated measure developed by Einspahr (2003) to assess dissimilarity in roles (e.g., "I consciously change the way I talk when I go between my work and nonwork roles") and were reverse-coded to indicate similarity. Six items, two which are reverse-coded, were adapted from Miller's (2000) scale development study to assess the similarity in values, beliefs, and attitudes between work and nonwork roles (e.g., "My attitude remains the same across both my work and nonwork roles"). The final two items were created for the purpose of the current study in order to assess the similarity in social groups (i.e., social identification) in the work and nonwork domain. However, these two items had low item-total correlations (<.2) and were therefore discarded. Coefficient alpha for the revised 10-item scale was .85. All items are presented in Appendix H.

Role polychronicity. A 10-item measure was adapted from Hecht and Allen (2005), which was derived from Bluedorn et al. (1999), to measure individual preference for juggling multiple role demands simultaneously. The items were revised to reflect juggling tasks across work and nonwork domains, rather than just tasks in the work domain, and are provided in Appendix I (e.g., "I believe people should try to complete work and nonwork tasks simultaneously"). Five items are reverse-scored, and all items were measured on a 5-point Likert scale (1 = Strongly Disagree; 5 = Strongly Agree) with higher scores indicating higher role polychronicity. Two items were discarded due to low item-total correlations (<.30), and the revised 8-item scale had a coefficient alpha of .83.

Work-nonwork conflict. A 12-item item measure was adapted from a scale development study conducted by Carlson et al. (2000) to measure multiple dimensions of work-nonwork conflict. Items were revised to reflect work-nonwork conflict rather than work-family conflict. Three items reflected each bi-directional dimension of work-nonwork conflict including *time-based work-nonwork conflict* (e.g., work-to-nonwork: "My work keeps me from nonwork

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activities more than I would like", α = .92; nonwork-to-work: "The time I spend on nonwork responsibilities often interferes with my work responsibilities", α = .77) and *strain-based work-nonwork conflict* (e.g., work-to-nonwork: "When I finish working I am often too frazzled to participate in nonwork activities", α = .92; nonwork-to-work: "Due to stress from my nonwork life, I am often preoccupied with nonwork matters at work", α = .91). Items were measured on a 5-point Likert scale (1 = Strongly Disagree; 5 = Strongly Agree), with higher scores indicating more experienced conflict. These items are presented in Appendix J.

Work-nonwork positive spillover. To assess positive spillover in the work and nonwork roles, a measure of work-family positive spillover developed by Hanson et al. (2006) was utilized in this study. Items were revised to reflect the nonwork domain rather than the family domain. In Hanson et al.'s (2006) scale development study, they found that positive spillover consisted of three factors reflecting *behavior-based instrumental positive spillover, value-based instrumental positive spillover,* and *affective positive spillover*, all of which are bi-directional (i.e., work-to-nonwork and nonwork-to-work). Therefore, behavior-based instrumental spillover was represented by four items for each direction (e.g., work-to-nonwork: "Skills developed at work help me in my nonwork life", α = .90; nonwork-to-work: "Skills developed in my nonwork life help me in my job", α = .90), while value-based instrumental spillover assessed by three items for each direction (e.g., work-to-nonwork: "Values developed at work make me a better person in my nonwork life", α = .90; nonwork-to-work: "Values developed in my nonwork life make me a better employee", α = .89). Affective positive spillover was also measured in both directions, using four items for each direction (e.g., work-to-nonwork: "Being in a positive mood at work helps me to be in a positive mood at nonwork activities", α = .91; nonwork-to-work: "Being in a positive mood at nonwork activities helps me to be in a positive mood at work", α =

.92) All items were measured on a 5-point Likert scale (1 = Strongly Disagree; 5 = Strongly

Agree) and are provided in Appendix K.

CHAPTER 8

RESULTS

Factor Structure and Dimensionality of Constructs

Confirmatory factor analyses (CFAs) were conducted using Mplus version 4.1 (Muthén

& Muthén, 1998-2007) to substantiate the factor structure of each scale. Separate CFAs were

run on each of the proposed dimensions of role integration and the uni-dimensional role

polychronicity scale. A variety of indices were used to evaluate model fit including the χ^2,

Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), RMSEA, and the standardized root

mean square residual (SRMSR). Cut-off values used to evaluate fit indices were as follows: χ^2 p

>.05 indicative of excellent fit, CFI and TLI $\geq$ .95 reflective of good fit (Hu & Bentler, 1998; Hu

& Bentler, 1999) with .90 viewed as a lower bound of acceptable fit (Lance & Vandenberg,

2002; Vandenberg & Lance, 2000), RMSEA $\leq$ .08 indicative of reasonable fit with values $\leq$ .05

being favored to reflect close fit and values $\geq$ .10 suggesting poor fit (Brown & Cudeck, 1993;

Hu & Bentler, 1998), SRMSR < .10 viewed as acceptable (Kline, 2005) with SRMSR < .08

indicative of excellent fit (Hu & Bentler, 1999). These results are provided in Table 3.

As shown in Table 3, the measures of work permeability, nonwork permeability, and role

polychronicity demonstrated acceptable fit with the data. Specifically, the obtained fit statistics

for the work and nonwork permeability scales were excellent (χ^2 p >.05, CFI and TLI > .95,

RMSEA < .06, SRMSR <.08), while the fit statistics for role polychronicity were less optimistic

(χ^2 = 78.20 p <.01, CFI = .93, TLI = .91, RMSEA = .09, SRMSR = .05) but in general were

within the range of acceptable cutoff values. However, both the work flexibility and nonwork

flexibility scales exhibited very poor fit with the data (χ^2 p <.01, CFI <.88, TLI <.81, RMSEA

>.14, SRMSR >.07). Further inspection of the items for each scale revealed high modification

indices and standardized residuals above acceptable cutoffs suggested by Byrne (1998) (i.e., >

2.58) for item 5 and item 7 of each scale. For work flexibility, item 5 had large standardized

residuals with item 2 (- 7.25) and item 3 (- 5.48) while item 7 had large standardized residuals

with item 2 (- 4.75), item 3 (- 5.86), and item 4 (- 2.88). Furthermore, item 5 and item 7 had

modification indices ranging from 14.05 to 55.77 with item 2, item 3, and item 4. For nonwork

flexibility, item 7 had no unacceptable item-level values while item 5 had large standardized

residuals with item 2 (-3.87), item 4 (3.46), and item 6 (8.37) and modification indices ranging

from 12.45 to 69.47 with item 2, item 4, and item 6. Because item 5 and item 7 were

conceptually similar (i.e., both deal with scheduling flexibility) and performed poorly at the

item-level for the work and/or nonwork domain, both items were deleted from the work and

nonwork flexibility scales. As shown in Table 3, after deleting these items the fit statistics for

each scale were much improved (work flexibility: $\chi^2 = 21.25$ $p <.01$, CFI = .97, TLI = .93,

RMSEA = .09, SRMSR = .04; nonwork flexibility: $\chi^2 = 20.23$ $p <.01$, CFI = .98, TLI = .95,

RMSEA = .09, SRMSR = .05). These revised scales were used in all subsequent analyses.

A series of nested CFA models was conducted on the scales comprised of theoretically-

related dimensions to determine the distinctness of factors, following guidelines demonstrated by

others (i.e., Edwards, 2001; Mallard & Lance, 1998). For identity similarity, and both domains

of work-nonwork conflict, the following nested models were tested: two correlated factors

(factors allowed to correlate), two orthogonal factors (factor correlations fixed to zero), and one

general factor (factor correlations fixed to unity). For the two domains of work-nonwork positive

spillover, the following nested models were tested: three correlated factors (factors allowed to

correlate), three orthogonal factors (factor correlations fixed to zero), and two correlated factors

(correlations between two factors—behavior- and value-based instrumental spillover—fixed to unity and equal correlations with the third factor) The significance of differences between nested models was assessed with a traditional test of change (Δ) in χ^2 (James, Mulaik, & Brett, 1982). These results are shown in Table 4.

As indicated by the results in Table 4, identity similarity was best specified as a higher order construct comprised of two correlated facets reflecting similarity in interaction style and similarity in values, beliefs, and attitudes. Although hypotheses were proposed for identity similarity as one general factor, the existence of two facets is not completely unexpected given that items for each facet came from different sources and had theoretically similar but distinct definitions. Both types of conflict (work-to-nonwork; nonwork-to-work) were also best modeled as a higher order construct defined by correlated facets of time-based conflict and strain-based conflict (see Table 4). And lastly, both types of spillover (work-to-nonwork; nonwork-to-work) were best represented by a higher order construct comprised of three correlated dimensions reflecting behavioral-based instrumental spillover, value-based instrumental spillover, and affective spillover (see Table 4). This three-dimensional higher order factor structure of positive spillover was also demonstrated by Hanson et al. (2006).

Because the study hypotheses specified role integration as a higher-order construct, separate second-order CFAs were conducted on work-to-nonwork and nonwork-to-work integration to evaluate the appropriateness of stipulating such a factor structure for the data. The second-order CFA comprised of nonwork flexibility, nonwork permeability, identity similarity in interaction style, and identity similarity in values, beliefs, and attitudes showed acceptable fit with the data ($\chi^2 = 349.00$ $p < .01$, CFI = .94, TLI = .93, RMSEA = .05, SRMSR = .06). However, not all first-order factors had strong positive intercorrelations. Nonwork flexibility

had small correlations with nonwork permeability (.01) and similarity in interaction style (.11) and a medium correlation with similarity in values, beliefs, and attitudes (.24). Nonwork permeability had small negative correlations with similarity in interaction style (-.11) and similarity in values, beliefs, and attitudes (-.18). Similarity in interaction style and similarity in values, beliefs, and attitudes were strongly correlated with one another (.43), as expected based on the CFA dimensionality results.

Regarding nonwork-to-work role integration, the second-order CFA comprised of work flexibility, work permeability, identity similarity in interaction style, and identity similarity in values, beliefs, and attitudes also showed acceptable fit with the data ($\chi^2 = 375.42$ $p < .01$, CFI = .91, TLI = .90, RMSEA = .06, SRMSR = .08). However, once again not all first-order factors had strong positive intercorrelations. Work flexibility had a strong positive correlation with work permeability (.49) but small intercorrleations with similarity in interaction style (.08) and similarity in values, beliefs, and attitudes (.14). Work permeability had small negative correlations with similarity in interaction style (-.02) and similarity in values, beliefs, and attitudes (-.06). Similarity in interaction style and similarity in values, beliefs, and attitudes were once again strongly correlated with one another (.43) as expected because the constructs are analogous in the two models.

Because of the occurrence of small positive (negative) correlations between some of the first-order factors, role integration was tested at the facet level instead of specifying an over-arching second-order factor. Treating role integration as four first-order factors allows for the possibility of differential effects between factors, which is likely given the variability in intercorrelations among factors. These refinements, along with the multi-dimensional nature of

constructs substantiated in the other CFA tests, are reflected in the structural models provided in Figure 3 and Figure 4.

Determining High Work/High Nonwork Involvement

In order to determine which participants were highly involved in both work and nonwork roles, a two-step cluster analysis approach was utilized following the recommendations of other researchers (Aldenderfer & Blashfield, 1984; Punj & Stewart, 1983). In the first step, a hierarchical cluster analysis was performed in SPSS version 12.0 (2003) using Ward's method— which minimizes variances within clusters—and utilizes the squared Euclidean distance as the similarity index (Hair & Black, 2000). The number of clusters was determined by evaluating the dendrogram (i.e., hierarchical tree) and plots of fusion coefficients, which is analogous to the "scree test" in exploratory factor analysis (Aldenderfer & Blashfield, 1984). The number of clusters obtained was then specified in a subsequent non-hierarichial *k*-means cluster anlysis, which assigns cases by moving them to the cluster whose centroid is closest to that case until all cases have been assigned to a cluster.

The two-step cluster analysis approach was performed twice, once for each type of involvement (behavioral, psychological). As shown in Table 5, the *k*-means cluster analysis specifying two clusters (based on results from Ward's method in step one) for behavioral involvement resulted in one cluster reflecting high work and high nonwork involvement ($N =$ 193) and one cluster reflecting high work and low nonwork involvement ($N = 184$). For psychological involvement (see Table 5), the *k*-means cluster analysis specifying three clusters (based on results from Ward's method in step one) resulted in one cluster defined by high work and high nonwork involvement ($N = 160$), one cluster reflecting high work and low nonwork involvement ($N = 105$), and one cluster reflecting low work and high nonwork involvement ($N =$

112). The behavioral involvement cluster solution was not significantly correlated with the

psychological involvement cluster solution (r = -.04), and only 70 cases were categorized as both

high work/high nonwork behavioral involvement *and* high work/high nonwork psychological

involvement. Therefore, there was little overlap in the clusters of different types of involvement.

Also, the percentage of cases assigned to each involvement cluster was similar for both

Organization A and Organization B.

Following the suggestions of Aldenderfer and Blashfield (1984), the validity of the

cluster analysis solutions were tested by performing one-way ANOVAs contrasting clusters on

all the study variables. While this is not a definitive validation test of the clustering solution, the

value of a cluster solution that has been validated is much greater than a solution that has not

(Aldenderfer & Blashfield, 1984). As shown in Table 6, the psychological involvement clusters

were significantly different from one another on 10 of the 17 study variables. This supports the

cluster grouping utilized but does not indicate whether effects were in the predicted direction.

The behavioral involvement clusters only differed on three variables. The lack of differences

between behavioral clusters may occur because the two clusters differ significantly on nonwork

hours (58.86 vs. 31.67, *p* <.01) but not work hours (43.89 vs. 44.82, *p* >.05).

The Two-Step Approach and Control Variables

Measurement model. Following Anderson and Gerbing's (1988) two-step approach, the

measurement model consisting of all exogenous and endogenous variables (except the moderator

variable—role polychronicity) for each directional model proposed (work-to-nonwork, nonwork-

to-work) was tested for the two high work/high nonwork groups (behavioral and psychological).

Factor loadings for all items in each measurement model were significant ($p < .01$) and are

provided in Table 7. Role polychronicity was not included in the measurement models because

subsequent tests of differences between the measurement model and main effects structural model were not to include the role polychronicity factor. However, to substantiate the factor structure of role polychronicity, a CFA was conducted separately for the two high work/high nonwork involvement groups. All items significantly loaded on the role polychronicity factor ($p < .01$), and model fit was deemed acceptable (see Table 8).

Structural model. The two domain-specific path models depicted in Figure 3 and Figure 4 for were tested using total disaggregation of items and sample covariance matrices in Mplus version 4.1 (Muthén & Muthén, 1998-2007) for individuals high on both work and nonwork involvement (separately for behavioral and psychological involvement). Because preliminary CFA results revealed that role integration was most appropriately specified at the first-order level, exogenous latent variables were allowed to correlate with one another. Also, because some of the proposed hypotheses predicted differential effects on first-order factors (i.e., stronger effects for instrumental vs. affective support), the disturbance terms for the subscales of positive spillover and conflict were allowed to covary among themselves (but not between conflict and positive spillover factors). This is an accepted alternative to specifying second-order factors (McDonald & Ho, 2002).

Following Anderson and Gerbing's (1988) recommendations, each structural model (work-to-nonwork, nonwork-to-work) was tested against its respective measurement model for each high work/high nonwork involvement group (behavioral, psychological). Because the measurement model is nested within the structural model, the two models were compared by employing a test of $\Delta\chi^2$ to evaluate the null hypothesis that the proposed path model results in significant worsening of model fit; suggesting the proposed path model is incorrectly specified (Anderson & Gerbing, 1988).

As shown in Table 9, the test of $\Delta\chi^2$ for the work-to-nonwork measurement and structural models resulted in no significant differences for either the high work/high nonwork behavioral involvement group ($\Delta\chi^2/\Delta df = 8.64/6$, $p > .05$) or the high work/high nonwork psychological involvement group ($\Delta\chi^2/\Delta df = 10.43/6$, $p > .05$). Therefore, some initial support is found that the proposed path model is not misspecified. However, for the test of $\Delta\chi^2$ between the nonwork-to-work measurement and structural models (see Table 10), significant differences were found (behavioral involvement $\Delta\chi^2/\Delta df = 12.71/6$, $p < .05$; psychological involvement $\Delta\chi^2/\Delta df = 20.71/6$, $p < .01$). While these results suggest that the proposed nonwork-to-work path model is perhaps misspecified, some researchers (Hayduk, 1996; Hayduk & Glaser, 2000) argue that the two-step approach is too restrictive a requirement when attempting to explore the full range of possible latent variable paths in a structural model—exemplified by the models proposed in this study.

Control variables. Variables considered potential covariates in past studies of work-nonwork conflict and positive spillover were measured for study participants. These variables included background variables such as gender, race, age, marital status, education, spouse employment, childcare assistance, number of children, as well as organizational variables such as organizational sample (Organization A vs. Organization B), employment status (hourly vs. salaried), organizational tenure, job tenure, salary, and supervisory responsibilities. Also, relative satisfaction with time devoted to work relative to nonwork activities was examined as a possible covariate. Because high work/high nonwork involvement individuals were the primary focus of this study, behavioral and psychological involvement groupings of these individuals were combined and correlations were computed between the potential covariates and outcome variables (see Table 11).

In order to maximize power and limit inclusion of impotent control variables (Becker, 2005), only covariates that demonstrated significant correlations with multiple dependent variables and low intercorrelations with other covariates were included as control variables in subsequent analyses. Based on these criteria, four variables (employment status, organizational tenure, supervisor responsibilities, and relative satisfaction) were included as manifest covariates in the work-to-nonwork structural model, but no covariates were included in the nonwork-to-work structural model. Parameters were "freed" for covariates only where bivariate correlations suggested a significant relationship with other covariates, exogenous variables, or endogenous variables. In order to maximize the sample size for each structural model tested, missing values for the dichotomous control variables were replaced with the highest frequency response.

Main Effects: Model Testing

Means, standard deviations, and intercorrelations among study variables are presented in Table 12 for the high work/high nonwork behavioral involvement group and in Table 13 for the high work/high nonwork psychological involvement group. Hypotheses 1-3 (main effects) were tested using two separate structural equation path models (work-to-nonwork, nonwork-to-work), one for high work/high nonwork behavioral involvement and one for high work/high nonwork psychological involvement.

Because a single indicator is never sufficient to judge the fit of a model to data, three types of indicators of fit were utilized in this study. Specifically, significance level of parameter estimates (i.e., z values of 1.96 or greater are significant at the $p \leq .05$ level), the χ^2 test, and aforementioned goodness-of-fit indices (i.e., CFI, TLI, RMSEA, and SRMSR) were used to evaluate the models representing the proposed hypotheses.

Following the recommendations provided by Becker (2005), the work-to-nonwork main effects structural model was tested with and without control variables for the two high work/high nonwork involvement groups. If the resulted did not differ, then controls could be ruled out as potential explanation of the findings. Although the fit of the work-to-nonwork model was similar with and without controls for the two behavioral and psychological involvement groups (see Table 9), there were changes in the pattern of relationships between role integration variables and outcome variables before and after inclusion of controls (see Table 14 - 16). Therefore, all work-to-nonwork main effects (and interaction effects) are discussed in the context of included control variables.

In general, the path models testing Hypotheses 1-3 demonstrated acceptable fit for both the high work/high nonwork behavioral and high work/high nonwork psychological involvement groups (see Table 9 and Table 10). Although the χ^2 was significant for all models tested, the majority of goodness-of-fit indices were within acceptable ranges. Based on a subjective inspection of the χ^2 and goodness-of-fit indices, the work-to-nonwork structural model fit better than the nonwork-to-work structural model, and the high work/high nonwork behavioral involvement group demonstrated the best fit with the data for both path models tested.

Main Effects: Work-Nonwork Conflict

Hypothesis 1a. Hypothesis 1a predicted a positive relationship between the facets of work-to-nonwork role integration (nonwork flexibility, nonwork permeability, identity similarity in interaction style, identity similarity in values, beliefs, and attitudes) and the two types of work-to-nonwork conflict (time-based, strain-based) for high work/high nonwork involvement groups. Mixed support was found for Hypothesis 1a.

Hypothesis 1a: High work/high nonwork behavioral involvement. For the high work/high nonwork behavioral involvement group (see Table 15), as predicted, as nonwork permeability increased so did both time-based work-to-nonwork conflict (.41, *p* <.01) and strain-based work-to-nonwork conflict (.30, *p* <.01). Contrary to expectations, as nonwork flexibility increased, time-based work-to-nonwork conflict decreased (-.19, *p* <.01). Also contrary to predictions, as identity similarity in interaction style increased, strain-based work-to-nonwork conflict decreased (-.15, *p* <.05). Likewise, as identity similarity in values, beliefs, and attitudes increased, both time-based and strain-based work-to-nonwork conflict decreased (-.21, *p* <.01; -.34, *p* <.01; respectively). No other relationships were statistically significant.

Hypothesis 1a: High work/high nonwork psychological involvement. Only three significant relationships were found between the facets of work-to-nonwork role integration and work-to-nonwork conflict for this group (see Table 16). As predicted, as nonwork permeability increased so did both time-based work-to-nonwork conflict (.25, *p* <.01) and strain-based work-to-nonwork conflict (.22, *p* <.01). Contrary to predictions, as identity similarity in values, beliefs, and attitudes increased, strain-based work-to-nonwork conflict decreased (-.24, *p* <.01). All other relationships were not significant.

Hypothesis 1b. Limited support was also found for Hypothesis 1b, which proposed a positive relationship between the facets of nonwork-to-work role integration (work flexibility, work permeability, identity similarity in interaction style, identity similarity in values, beliefs, and attitudes) and the two types of nonwork-to-work conflict (time-based, strain-based) for high work/high nonwork involvement groups.

Hypothesis 1b: High work/high nonwork behavioral involvement. For this group (see Table 15), the only expected finding was that as work permeability increased so did strain-based

nonwork-to-work conflict (.33, *p* <.01). Contrary to expectations, as identity similarity in values, beliefs, and attitudes increased, time-based nonwork-to-work conflict decreased (-.27, *p* <.01). All other relationships for this group were not significant.

Hypothesis 1b: High work/high nonwork psychological involvement. Similar results were found for the high work/high nonwork psychological involvement group. As show in Table 16, as work permeability increased so did both time-based nonwork-to-work conflict (.38, *p*<.01) and strain-based nonwork-to-work conflict (.58, *p*<.01). Contrary to predictions, as identity similarity in values, beliefs, and attitudes increased, time-based nonwork-to-work conflict decreased (-.32, *p* <.01). No other relationships were statistically significant for this group.

Main Effects: Work-Nonwork Positive Spillover

Hypothesis 2a. Hypothesis 2a predicted a positive relationship between the facets of work-to-nonwork role integration (nonwork flexibility, nonwork permeability, identity similarity in interaction style, identity similarity in values, beliefs, and attitudes) and the three types of work-to-nonwork positive spillover (instrumental behavior-based, instrumental value-based, affective) for high work/high nonwork involvement groups. Limited support was found for this prediction.

Hypothesis 2a: High work/high nonwork behavioral involvement. For this group (see Table 15), as identity similarity in values, beliefs, and attitudes increased so did work-to-nonwork behavior-based instrumental spillover (.26, *p*<.01) and work-to-nonwork value-based instrumental spillover (.44, *p*<.01), as expected. No other relationships were significant for this group.

Hypothesis 2a: High work/high nonwork psychological involvement. For this group (see Table 16), in line with predictions, as identity similarity in values, beliefs, and attitudes increased

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so did both work-to-nonwork behavior-based instrumental spillover (.35, *p*<.01) and work-to-nonwork value-based instrumental spillover (.48, *p*<.01). However, an unexpected negative relationship between identity similarity in interaction style and work-to-nonwork value-based instrumental spillover (-.23, *p*<.05) was also found for this group. None of the other relationships were significant.

Hypothesis 2b. Little support was found for Hypothesis 2b, which predicted a positive relationship between the facets of nonwork-to-work role integration (work flexibility, work permeability, identity similarity in interaction style, identity similarity in values, beliefs, and attitudes) and the three types of nonwork-to-work positive spillover (instrumental behavior-based, instrumental value-based, affective) for high work/high nonwork involvement groups.

Hypothesis 2b: High work/high nonwork behavioral involvement. Two significant relationships were found for the behavioral involvement group (see Table 15). As expected, as identity similarity in values, beliefs, and attitudes increased so did nonwork-to-work affective spillover (.27, *p*<.01). However, contrary to expectations, as work permeability increased, nonwork-to-work value-based instrumental spillover decreased (-.29, *p*<.05). No other relationships were significant for this group.

Hypothesis 2b: High work/high nonwork psychological involvement. For this group, the direction of many of the relationships was not expected (see Table 16). As predicted, as work flexibility increased so did nonwork-to-work value-based instrumental spillover (.35, *p*<.05). Also in line with expectations, as identity similarity in values, beliefs, and attitudes increased so did nonwork-to-work affective spillover (.29, *p*<.01). Contrary to expectations, as work permeability increased, nonwork-to-work behavior-based instrumental spillover decreased (-.41, *p*<.01) as did nonwork-to-work value-based instrumental spillover (-.63, *p*<.01). Also not

expected, as identity similarity in interaction style increased, nonwork-to-work affective

spillover decreased (-.24, *p*<.05). None of the other relationships were statistically significant.

Differential Effects: Instrumental Positive Spillover vs. Affective Positive Spillover

Following guidelines by Steiger, Shapiro, and Browne (1985), Hypothesis 3 was tested

by running a series of models constraining the relationship for each role integration facet so that

(a) the paths for behavior-based instrumental spillover and affective spillover were constrained to

equality or (b) the paths for value-based instrumental spillover and affective spillover were

constrained to equality. A significant $\Delta\chi^2$ between the constrained model (i.e., two paths "freed"

but set equal) and the previously tested unconstrained model (i.e., all paths "freed") provides

statistical evidence of significant differences in two path coefficients under investigation. The

parameter estimates from the unconstrained model (see Table 15 and Table 16) then provide

information to determine which path coefficient is stronger.

Some support was found for Hypothesis 3a, which predicted work-to-nonwork role

integration has a stronger effect on work-to-nonwork instrumental spillover than affective

spillover. As shown in Table 17, across the two high work/high nonwork involvement groups,

there were three significant differences between the path coefficients for value-based

instrumental spillover and affective spillover. Based on the parameter estimates obtained from

Table 15 and Table 16, these differences were in the direction predicted. Specifically, identity

similarity in values, beliefs, and attitudes had a stronger effect on value-based instrumental

spillover than affective spillover for both high work/high nonwork involvement groups, and

nonwork flexibility had a stronger effect on value-based instrumental spillover than affective

spillover for the high work/high nonwork psychological involvement group.

Mixed support was found for Hypothesis 3b, which predicted nonwork-to-work role integration has a stronger effect on nonwork-to-work instrumental spillover than affective spillover. As shown in Table 18, across the two high work/high nonwork involvement groups, there were seven significant differences between the path coefficients for instrumental spillover (behavior-, value-based) and affective spillover. However, the parameter estimates obtained (see Table 15 and Table 16) showed four of these significant differences were in the direction opposite predictions. For the high work/high nonwork behavioral involvement group, work permeability had a stronger effect on value-based instrumental spillover than affective spillover, as expected. Conversely, identity similarity in values, beliefs, and attitudes had a stronger effect on affective spillover than behavior-based instrumental spillover. For the high work/high nonwork psychological involvement group, work permeability had a stronger effect on both behavior based and value-based instrumental spillover than affective spillover, as predicted. However, contrary to expectations, identity similarity in interaction style had a stronger effect on affective spillover than both behavior-based and value-based instrumental spillover. Similarly, identity similarity in values, beliefs, and attitudes had a stronger effect on affective spillover than value-based instrumental spillover

Interaction Effects: Model Testing

Hypothesis 4-5 were tested by running a series of latent interaction path models using the latent moderated structural (LMS) equation method (Klein & Moosbrugger, 2000; Schermelleh-Engel, Klein, & Moosbrugger, 1998) implemented in Mplus version 4.1 (Muthén & Muthén, 1998-2007). This method uses an iterative maximum likelihood estimation procedure that explicitly takes into account the non-normality inherent in latent product variables. It does not require that product indicators be formed. Rather, the non-normal distribution implied by latent

interactions is modeled as a mixture of the multivariate normal density of the indicator variables. In simulation studies conducted by Marsh, Wen, and Hau (2004) as well as Schermelleh-Engel et al. (1998), the LMS method was more efficient (i.e., had smaller sampling variance) and had less bias in standard errors than did the product indicator approach performed in LISREL.

Unfortunately, the LMS method has its disadvantages. First, because of the iterative process invoked by the procedure in Mplus, computations required to run multi-item interaction terms can be quite time consuming. To overcome this problem, four separate total disaggregation latent interaction models (reflecting Hypotheses 4-5) were tested for each of the two high work/high nonwork involvement groups and a Bonferoni adjustment of p value significance was adopted to evaluate parameter estimates (i.e., .05/4, .01/4). Second, the LMS method does not provide traditional model fit statistics. The lack of overall model fit statistics with the LMS method in Mplus is due to the fact that they have not been developed yet. For example, it is not clearly understood what the "unrestricted model" should be. In regular structural equation models an unrestricted covariance matrix is used to evaluate model fit. But this is only because regular structural equation models concern covariance matrix fitting, which is not the case with interactions because they give rise to non-normal outcomes where sample covariance matrices are not sufficient statistics (Marsh et al., 2004). Therefore, hypothesis testing for the interaction path models in this study was based solely on the significance of parameter estimates associated with the interaction terms. Then, significant interaction terms were graphically plotted (using +/- one standard deviation from the mean) to interpret the form and direction of the interaction following the guidelines set forth by Kenny and Judd (1984).

Interaction Effects: Work-Nonwork Conflict

Hypothesis 4a. Hypothesis 4a predicted that role polychronicity moderates the relationship between work-to-nonwork role integration and work-to-nonwork conflict. None of these predicted interactions were significant for either high work/high nonwork involvement group (see Table 15 and Table 16). Thus, no support was found for Hypothesis 4a.

Hypothesis 4b. Hypothesis 4b predicted that role polychronicity moderates the relationship between nonwork-to-work role integration facets and time-based and strain-based nonwork-to-work conflict such that a higher level of role polychronicity weakens the relationship. Partial support was found for this hypothesis.

Hypothesis 4b: High work/high nonwork behavioral involvement. For this group (see Table 15), significant results were found for the interaction between identity similarity in interaction style and role polychronicity predicting nonwork-to-work time-based conflict (-.40, *p* <.01) and nonwork-to-work strain-based conflict (-.44, *p* <.05) as well as the interaction between identity similarity in values, beliefs, and attitudes and role polychronicity predicting nonwork-to-work time-based conflict (-.30, *p* <.05). Plots of the interaction between identity similarity in interaction style and role polychronicity were in the direction predicted (see Figure 5 and Figure 6), but a weakening effect did not occur. Instead, an opposite (i.e., crossed) effect was found for identity similarity in interaction style with both time-based and strain-based nonwork-to-work conflict depending on level of role polychronicity (high vs. low). A similar pattern of results was found for the interaction between identity similarity in values, beliefs, and attitudes and role polychronicity on nonwork-to-work time-based conflict (see Figure 7). Once again, there was an opposite effect found for identity similarity in values, beliefs, and attitudes depending on level of role polychronicity. However, this was not a completely crossed interaction effect because

identity similarity in values, beliefs, and attitudes alone had a negative relationship with time-based nonwork-to-work conflict such that as identity similarity in values, beliefs, and attitudes increased, time-based nonwork-to-work conflict decreased (see Table 15).

Hypothesis 4b: High work/high nonwork psychological involvement. Three significant interactions were also found for the psychological involvement group (see Table 16). Specifically, high role polychronicity weakened the effect of work permeability on both time-based nonwork-to-work conflict (see Figure 8) and strain-based nonwork-to-work conflict (see Figure 9) such that the slopes for the low polychronicity group were steeper than the slopes for the high polychronicity group. The form of these interactions, accompanied by the significant main effects found for work permeability (see Table 16), provide some support for Hypothesis 4b. However, a somewhat different effect of role polychronicity occurred for the relationship between identity similarity in interaction style and nonwork-to-work time-based conflict (see Figure 10). Specifically, instead of a weakening effect, there was a completely crossed effect for identity similarity in interaction style found for nonwork-to-work time-based conflict depending on level of role polychronicity (high vs. low).

Interaction Effects: Work-Nonwork Positive Spillover

Hypothesis 5a. Hypothesis 5a predicted that role polychronicity moderates the relationship between work-to-nonwork role integration facets and work-to-nonwork positive spillover such that a higher level of role polychronicity strengthens the relationship. No significant interactions were found for the psychological involvement group; however, three significant interactions were found for the behavioral involvement group (see Table 15). Graphical plots of the interaction between nonwork flexibility and role polychronicity on work-to-nonwork value-based instrumental spillover showed that the effect of role polychronicity was

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in the direction opposite expected (see Figure 11). Furthermore, the slopes were similar in magnitude instead of depicting a weakening or strengthening effect. A significant interaction was also found for the effect of nonwork permeability and role polychronicity on work-to-nonwork behavior-based instrumental spillover (see Figure 12). While this interaction was in the direction predicted, once again slopes were similar in magnitude, suggesting a crossed interaction effect and no strengthening effect. Finally, also contrary to expectations, high role polychronicity weakened (instead of strengthened) the effect of identity similarity in values, beliefs, and attitudes on work-to-nonwork value-based instrumental spillover (see Figure 13). Taken as a whole, minimal support was found for Hypothesis 5a.

Hypothesis 5b. Hypothesis 5b predicted that role polychronicity moderates the relationship between nonwork-to-work role integration facets and nonwork-to-work positive spillover such that a higher level of role polychronicity strengthens the relationship. This hypothesis was not supported for the behavioral involvement group; however, three significant interactions were found for the psychological involvement group (see Table 15). As show in Figure 14, a crossed interaction effect was found for work flexibility on nonwork-to-work behavior-based instrumental spillover, depending on level of role polychronicity. The two other significant interactions also occurred in an unexpected manner. Specifically, work permeability had a negative (instead of positive) effect on nonwork-to-work behavior-based instrumental spillover, and role polychronicity weakened this effect (see Figure 15). A very similar unexpected trend was found for the relationship between work permeability and nonwork-to-work value-based instrumental spillover (see Figure 16). Overall, limited support was found for Hypothesis 5b.

Differential Effects: Profiles of Work-Nonwork Involvement

Hypothesis 6 predicted that the pattern of relationships proposed in Hypothesis 1-5 would receive stronger support in groupings of high work/ high nonwork involvement than any other groupings of involvement. This hypothesis was investigated by testing the same main effects and interaction path models previously conducted with the high work/high nonwork involvement groups on the other groupings of involvement derived from the cluster analysis results, and differences in model fit and parameter estimates were qualitatively evaluated. Specifically, models were tested for the high work/low nonwork behavioral involvement group and the two groupings of psychological involvement (i.e., high work/low nonwork, low work/high nonwork).

Support was found for Hypothesis 6 based on the main effects structural model fit statistics. However, sample size cannot be ruled out as a contributing factor for these differences because the high work/high nonwork involvement groups were always larger than the other groupings of involvement. As shown in Table 9 and Table 10, the high work/high nonwork behavioral involvement group typically produced better fit statistics for both work-to-nonwork and nonwork-to-work directionality than did the high work/low nonwork behavioral involvement group. Except for the χ^2 test, the same superiority in fit indices were found for the high work/high nonwork psychological involvement group compared to the other groupings of psychological involvement (see Table 9 and Table 10). This provides some initial, albeit subjective, evidence that the proposed models were most applicable to high work/high nonwork involvement groups.

Hypothesis 6 also received modest support based on the significant (expected and unexpected) relationships found for each behavioral involvement cluster. The pattern of work-to-nonwork directional relationships for the high work/high nonwork behavioral involvement

group (See Table 15) was similar to the pattern of relationships for the high work/low nonwork behavioral involvement group (see Table 19). Although there were no significant interactions for the high work/low nonwork group, the quantity, pattern, and direction of work-to-nonwork directional main effects was similar to those found for the high work/high nonwork group. However, substantially fewer significant nonwork-to-work directional relationships were found for the high work/low nonwork behavioral involvement group compared to the high work/high nonwork group. Therefore, considered in tandem, these results provide some support for Hypothesis 6 with regard to behavioral involvement groupings.

Some support was also found for Hypothesis 6 when comparing the psychological involvement clusters. For the work-to-nonwork directional relationships, the relationships found for the high work/high nonwork involvement group (see Table 16) were similar in quantity, pattern, and direction to those found for the high work/low nonwork (see Table 20) and low work/high nonwork (see Table 21) groups. Also, the lone significant work-to-nonwork directional interaction was found for the high work/low nonwork involvement group (see Figure 17). However, just as in the behavioral involvement comparisons, significant (expected and unexpected) nonwork-to-work directional relationships occurred more frequently in the high work/high nonwork group than either of the other two psychological involvement groups. Furthermore, as opposed to the six significant nonwork-to-work directional interactions found for the high work/high nonwork psychological involvement group, only one significant interaction was found across the other two groupings of psychological involvement (see Figure 18).

Differential Effects: Conceptualizations of Role Involvement

Hypothesis 7a and 7b were competing hypotheses predicting stronger support for

Hypotheses 1 – 5 for the high work/high nonwork behavioral involvement group (Hypothesis 7a)

versus the high work/high nonwork psychological involvement group (Hypothesis 7b). These

two groups were not compared in a multi-group structural equation modeling framework because

of lack of independence of observations (i.e., 70 cases were present in both groups) as well as

complexity of the models tested. Instead, differences in overall model fit statistics and the

pattern of significant relationships between the two groups were qualitatively evaluated.

In general, mixed support was found for Hypothesis 7a and 7b. Model fit was better for

the high work/high nonwork behavioral involvement group than the psychological involvement

group for both work-to-nonwork directionality (see Table 9) and nonwork-to-work directionality

(see Table 10). However, there was a discrepancy in sample size between the two groups

(behavioral $N = 193$, psychological $N = 160$), and increased sample size has a positive effect on

model fit when many parameters are estimated (Cudeck & Henly, 1991). The pattern of

significant relationships provided less conclusive evidence supporting one conceptualization of

involvement over another. Although the direction of relationships was similar across the two

groups for both work-to-nonwork and nonwork-to-work relationships (see Table 15 versus Table

16), more significant (expected and unexpected) work-to-nonwork directional effects and

interactions were found for the behavioral involvement group (10) compared to the

psychological involvement group (6) when discounting main effects redundant with interaction

effects. Therefore, behavioral involvement received more support for work-to-nonwork

predictions. However, the opposite conclusion was drawn when evaluating the nonwork-to-work

directional effects and interactions (see Table 15 versus Table 16). Specifically, after

discounting main effects redundant with interaction effects, there were more significant

(expected and unexpected) nonwork-to-work relationships for the psychological involvement

group (10) than for the behavioral involvement group (6).

CHAPTER 9

DISCUSSION

The purpose of this study was to examine the applicability of role integration theory within the context of work-nonwork conflict and positive spillover for individuals highly involved in both work and nonwork domains, and to investigate the influence of role polychronicity on proposed relationships. This study makes a contribution to the work-nonwork literature because it is one of the first studies to apply role integration theory specifically to a sample of role jugglers. This study is also the first of its kind to position role polychronicity as an important consideration for work-nonwork relationships. Furthermore, this is one of a few studies to incorporate role involvement that expands beyond the family domain to include often-overlooked nonwork domains such as community, leisure, religion, and self-development. Although many of the findings were unanticipated, they underscore the importance and relevance of understanding relationships between role integration, role polychronicity, and work-nonwork outcomes (conflict, positive spillover) for individuals highly involved in both work and nonwork domains.

There were five main findings from this study. First, different patterns of results were found for the role integration facets. Second, role integration facets typically demonstrated opposite relationships with work-nonwork conflict and positive spillover. Third, role integration facets were better predictors of work-nonwork conflict than positive spillover. Fourth, some evidence was found for treating role polychronicity as an important moderator variable. Finally, results suggest role involvement is an important consideration for investigating the relationship between role integration and work-nonwork outcomes.

Differential Effects Among Role Integration Facets: Work-Nonwork Conflict

In general, differential effects were found for role integration facets on work-nonwork conflict. Of the dimensions of role integration, only boundary permeability consistently demonstrated a relationship with work-nonwork conflict in the direction predicted. Specifically, as boundary permeability increased, work-nonwork conflict increased. These results are consistent with recent findings on the relationship between aspects of permeability and work-family conflict (Kreiner, 2006; Olson-Buchanan & Boswell, 2006) as well as findings showing that telework (i.e., working from home) increases work-family conflict primarily due to the likelihood of interruptions (Schultz, Wu, & Foster, 2006), which is analogous to boundary permeability.

Contrary to expectations, the few significant boundary flexibility results found indicated that as boundary flexibility increases, work-nonwork conflict decreases. A possible explanation for these findings is the operationalization of boundary flexibility used in this current study. Although Ashforth et al. (2000) discussed both temporal and spatial flexibility, the final set of items for boundary flexibility dealt with temporal flexibility (i.e., leaving work to take care of nonwork responsibilities) rather than spatial flexibility (i.e., working from home). This is an important distinction because some authors suggest that telework (spatial flexibility) reflects more of an integration strategy while flextime (temporal flexibility) reflects more of a segmentation strategy (Kossek, Noe, & DeMarr, 1999; Rau & Hyland, 2002; Rothbard, Phillips, & Dumas, 2005). According to Kossek et al. (1999), the temporal restructuring achieved by flextime helps remove any overlap in work and nonwork demands in a way that reinforces boundaries and reduces cross-role interruptions, thereby reducing role conflict.

Similar to the findings for boundary flexibility, numerous negative relationships were found between identity similarity (interaction style; values, beliefs, and attitudes) and work-nonwork conflict. In general, as identity similarity increased, work-nonwork conflict decreased. These findings contradict the anticipated beneficial effects of dissimilar role identities suggested by Ashforth and colleagues (Ashforth, 2001; Ashforth & Mael, 1989)—namely that identity dissimilarity allows individuals to psychologically compartmentalize roles in order to buffer negative experiences in one role from the other role. However, a possible explanation for these findings comes from Donahue, Robins, Roberts, and John's (1993) work on *self-concept differentiation* which suggested that diverging role identities has detrimental outcomes. Research on this concept has found that individuals with diverging personalities across valued roles report higher depression and anxiety (Bigler, Neimeyer, & Brown, 2001) and lower in-role satisfaction (Donahue et al., 1993). A fruitful avenue for future research on identity similarity is to examine the relationship between identity similarity and other aspects of role identity such as *self-complexity*, which refers to the ability of a complex self-representation incorporating multiple roles to prevent episodic stressful events in one role from spreading to other segments of an individual's self-representation (Linville, 1987; Morgan & Janoff-Bulman, 1994), and effects on subsequent work-nonwork outcomes.

Differential Effects Among Role Integration Facets: Work-Nonwork Positive Spillover

Although few significant relationships were found for work-nonwork positive spillover, role integration facets still exhibited differential effects. As expected, the few significant effects found for boundary flexibility (and overall pattern of relationships) suggest that as boundary flexibility increases so does instrumental positive spillover. Similar to these results, research by

Voydanoff (2004) found that ability to take time off during the workday to take care of family needs (boundary flexibility) increased work-to-family facilitation (positive spillover).

In contrast to the results for boundary flexibility, significant negative relationships were found for boundary permeability and instrumental spillover. As mental and physical cross-role interruptions increased, positive spillover of behaviors and values from one domain to the other decreased. Because the majority of research on positive spillover is just beginning to accumulate (Frone, 2003), it is difficult to provide theoretical or empirical justification for this unexpected finding. Intuitively, it is possible that as mental and physical cross-role interruptions increase, there exist fewer opportunities to apply resources (i.e., behaviors, skills, and values) from one domain to the other. To substantiate findings from this study, future research should be conducted that examines the mechanisms underlying the negative relationship between boundary permeability and positive spillover such as opportunities for cross-role transfer, role overload, and in-role performance.

In general, positive relationships were found between identity similarity (interaction style; values, beliefs, and attitudes) and work-nonwork positive spillover, as predicted. As identity similarity increased so did instrumental and/or affective spillover. One interesting finding for identity similarity is that it often had differential effects on instrumental and affective spillover depending on directionality. Specifically, results showed identity similarity has a stronger effect on work-to-nonwork instrumental spillover than affective spillover. Conversely, identity similarity had a stronger effect on nonwork-to-work affective spillover than instrumental spillover. These findings are in line with previous research suggesting work-nonwork relationships occur in asymmetrical directions (Frone et al., 1992b; Pleck, 1977), and they

provide clarification on the direction of relationships (work-to-nonwork vs. nonwork-to-work) for types of positive spillover (instrumental vs. affective).

Differential Effects for Work-Nonwork Conflict vs. Positive Spillover

The majority of relationships found were in the opposite direction for conflict versus positive spillover. In general, as boundary permeability increased, work-nonwork conflict increased and positive spillover decreased. Conversely, as boundary flexibility and identity similarity increased, work-nonwork conflict decreased and positive spillover increased. While this finding limits the ability of boundary theory to serve as a linking mechanism between conflict and positive spillover, the different pattern of relationships found across the outcomes contributes to research suggesting these two constructs are conceptually distinct (Frone, 2003; Hanson et al., 2006) and are orthogonal to one another (Wayne et al., 2004).

Predicting Work-Nonwork Conflict and Positive Spillover

Results from this study provided evidence that role integration facets consistently account for more variance in work-nonwork conflict than positive spillover. Accordingly, there were more significant relationships found for work-nonwork conflict than work-nonwork positive spillover. Because work-nonwork positive spillover is seldom investigated in tandem with work-nonwork conflict, there is little theoretical or empirical evidence to help understand these findings. However, Wayne et al. (2004) found similar discrepancies in the amount of variance accounted for in work-family conflict and facilitation (positive spillover) by personality variables. In light of the recent positive psychology movement (e.g., Compton, 2005; Luthans & Youssef, 2007), the findings from this current study suggest a valuable caveat—negative outcomes are still an important consideration in the organizational sciences literature. Furthermore, perhaps the best way to increase understanding of positive outcomes (e.g., positive

spillover) is to investigate them in unison with negative outcomes (e.g., conflict) instead of focusing on one phenomenon in lieu of the other.

To summarize the findings for role integration, perhaps the most significant conclusion drawn from this study is that boundary theory is not without its limitations within the context of work-nonwork conflict and positive spillover. Boundary theory was initially discussed as general overarching framework for understanding transitions between roles. Thus, boundary theory was not initially conceptualized as a framework for understanding the work-nonwork interface. Furthermore, Ashforth and his colleagues (Ashforth et al., 2000; Ashforth, 2001) did not fully delineate the nature of each role integration facet or make specific predictions at the facet level. Results from this current study suggest modifications to boundary theory may be necessary in order to provide better explanation of the effects found for work-nonwork conflict and positive spillover. Although many unexpected relationships were found, the overall findings from this study suggest that role integration facets serve an important function in determining work-nonwork conflict and positive spillover for individuals displaying high work/high nonwork involvement.

The Influence of Role Polychronicity

Results from this study provide some initial evidence that role polychronicity may be an important variable to consider within the realm of work-nonwork for those high in work and nonwork involvement. Twelve of the eighty possible interactions tested for the high work/high nonwork involvement groups were significant, which is substantial if one takes into account the conservative Bonferroni correction adopted and the general difficulty in detecting interaction effects in organizational research (Aguinis & Stone-Romero, 1997). A promising extension of this study is to investigate how role polychronicity as a preference may differ from role

polychronicity adopted in response to a specific situation. It is possible that some people *have* (rather than *want*) to simultaneously attend to demands from multiple roles in order to maintain successful role functioning. For these people, role polychronicity may still have some beneficial effects on work-nonwork conflict and positive spillover. However, the individuals who adopt role polychronicity out of necessity rather than preference may experience more detrimental affective consequences such as burnout and emotional strain. While there is no research to date on role polychronicity in the work-nonwork literature, Maslach (2005) recently suggested that mismatch between the skills needed to achieve work-nonwork balance and personal preferences leads to a greater risk of burnout.

The form of the interactions found for role polychronicity also reveals important information about its function within the context of role integration. Across the two high work/high nonwork involvement groups, the six significant interactions found for work-nonwork conflict show that high role polychronicity individuals experience more conflict than low polychronicity individuals when role integration is low; however, they experience less conflict than low polychronicity individuals when role integration is high. Four of the six significant interactions found for positive spillover show similar results such that high polychronicity individuals experience less positive spillover than low polychronicity individuals when role integration is low, but they exhibit more positive spillover than low polychronicity individuals when role integration is high. These results indicate that congruence between level of role polychronicity and level of role integration is an important determinant of work-nonwork outcomes, which substantiates burgeoning interest in person-environment (P-E) fit in the work-nonwork literature (e.g., Maslach, 2005; Voydanoff, 2007).

Highlighting the importance of P-E fit, recent research by Kreiner (2006) found that congruence between general role integration preferences and enacted role integration behaviors had significant effects on work-nonwork conflict and job satisfaction. Besides obvious P-E fit extensions solely pertaining to role integration (i.e., employee-supervisor fit, employee-customer fit, employee-occupation fit), findings from this current study also suggest adopting a P-E fit framework for role polychronicity. Because successfully juggling work and nonwork demands is often aided by support from others (Allen, 2001; Holahan & Gilbert, 1979), congruence in role polychronicity between spouses/partners is an important avenue for future research. For example, it is possible that mismatch in role polychronicity between spouses may lead to heightened stress and anxiety for both individuals and quite possibly poorer in-role functioning at the individual and/or dyadic level. Similarly, congruence in role polychronicity with other vested parties at work such as supervisors and team members may affect work-nonwork conflict and positive spillover. Research on task polychronicity at work has shown that congruence between employee polychronicity and supervisor polychronicity as well as congruence between employee polychronicity and team polychronicity leads to higher organizational commitment and job performance (Slocombe & Bluedorn, 1999). Thus, various permutations of P-E fit in role polychronicity seem to be very fruitful areas for future work-nonwork research.

The Importance of Role Involvement

Another important conclusion from this study is that role involvement influences the effects of role integration on work-nonwork conflict and positive spillover. Frone et al. (1992a) implicated role involvement as one of the primary antecedents of work-family conflict; however, few work-nonwork researchers give it adequate theoretical or methodological consideration in their studies. Findings from this study showed that role integration effects on work-nonwork

conflict and spillover occur most often for those highly involved in both work and nonwork domains. To understand the nature of conflict and positive spillover across groupings of involvement, a series of post hoc *t*-tests were run to determine how often the high work/high nonwork involvement groupings displayed significantly higher means than other groupings of involvement. Results for behavioral involvement groupings showed that high work/high nonwork involvement individuals were significantly higher than high work/low nonwork involvement individuals on only one variable, nonwork-to-work conflict ($\overline{X}$ = 2.11 vs. 1.93, *p* < .01). However, post hoc comparisons for psychological involvement showed that the high work/high nonwork involvement group was significantly higher than both the high work/low nonwork and low nonwork/high work groups on work-to-nonwork value-based spillover ($\overline{X}$ = 3.71 vs. 3.48 vs. 3.22, *p* <.01), nonwork-to-work behavior-based spillover ($\overline{X}$ = 3.97 vs. 3.73 vs. 3.73, *p* <.01), nonwork-to-work value-based spillover ($\overline{X}$ = 4.18 vs. 3.92 vs. 3.92, *p* <.01), and nonwork-to-work affective spillover ($\overline{X}$ = 4.04 vs. 3.92 vs. 3.85, *p* <.01). These results suggest that high psychological involvement in work and nonwork is by itself an important determinant of positive spillover, particularly from nonwork-to-work.

The findings from this study suggest there are still questions to be answered regarding role involvement. For the high work/high nonwork groups, there were a higher number of significant (expected and unexpected) relationships found in the work-to-nonwork direction for the behavioral involvement group than the psychological involvement group. Conversely, there were more significant (expected and unexpected) relationships found in the nonwork-to-work direction for the psychological involvement group than the behavioral involvement group. These results provide some evidence that behavioral involvement plays an important role for work-to-nonwork integration effects while psychological involvement plays an important role for

nonwork-to-work integration effects. A possible explanation for the findings regarding psychological involvement is that individuals try to assimilate nonwork pursuits into work when high importance is placed on both domains, and these attempts may be successful or unsuccessful. However, work-to-nonwork outcomes may depend upon behavioral involvement because work is viewed as an involuntary necessity that prohibits or promotes time spent in nonwork domains.

While findings from this study cannot help substantiate the superiority of one conceptualization of involvement over the other, they do confirm previous findings that both psychological and behavioral involvement are uniquely important and have differential effects on work-nonwork outcomes (Carlson & Frone, 2003; Carlson & Kacmar, 2000; Greenhaus et al., 2003). Furthermore, ANOVA results for the involvement profiles suggest that individuals may be more easily discernable on psychological involvement rather than behavioral involvement because time spent at work (for the most part) is not under voluntary individual control. Therefore, there are only small differences for the majority of full-time employees.

Implications for Theory

Despite a number of findings contradictory to the proposed hypotheses, the present study has important implications for theory on role integration. First, while other research has focused primarily on boundary flexibility or boundary permeability (Kossek, Lautsch, & Eaton, 2006; Kreiner, 2006), findings from the current study suggest that identity similarity in interaction style as well as values, beliefs, and attitudes is an important component of role integration and is related to work-nonwork conflict and positive spillover. Therefore, future studies should continue to incorporate it as a predictor in work-nonwork research. Second, although the unexpected relationships found call into question some of the tenets of boundary theory, many of

the role integration facets were significantly related to outcomes. These findings suggest that role integration is an important variable associated with conflict and positive spillover for high work/high nonwork involvement individuals. However, there are likely boundary conditions and underlying mechanisms needing further investigation to understand the complex process by which role integration facets are intertwined with one another. Some areas for future research that may help enhance our understanding of role integration include the transition time between work and nonwork roles (Ashforth et al., 2000), differences between role integration preferences and enacted role integration behaviors (Kreiner, 2006), and possible role overload (versus conflict) due to high identity similarity between roles.

Results from this study also have implications for future research on the conceptualization and measurement of role involvement. The dissimilar pattern of results found for psychological and behavioral involvement call into question methods that solely focus on one type of involvement or the other, and validate the need for a comprehensive theoretical and methodological framework to incorporate both aspects of involvement. Consequently, some authors have suggested that the congruence between behavioral and psychological involvement may be the key to determining conflict (Perrewé & Hochwarter, 2001; Perrone, Webb, & Blalock, 2005). Also, Greenhaus et al. (2003) recently conducted a study that included behavioral involvement (i.e., time invested) and psychological involvement in addition to role satisfaction to study the effects of balance between work and family on stress, quality of life, and work-family conflict. Their study is noteworthy because of the inclusion of role satisfaction as an additional type of involvement. Results from this current study found that relative satisfaction with time devoted to work and nonwork activities was a significant correlate of many work-nonwork outcomes, and therefore was treated as a covariate in subsequent analyses. In line with

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Greenhaus et al. (2003), perhaps a more appropriate treatment of relative satisfaction would be to include it as an indicator of involvement in future studies.

Research on personality and individual differences in the work-nonwork literature has been noticeably scant (Eby et al., 2005). However, this study found that individual differences (i.e., role polychronicity) play an integral part in determining work-nonwork outcomes. While the influence of role polychronicity may be primarily limited to individuals highly involved in both work and nonwork, there remain important questions and avenues for research on the construct. For example, it would be valuable to learn at what minimum threshold of work-nonwork involvement role polychronicity becomes important in determining outcomes. Furthermore, its effect on more distal outcomes such as job satisfaction, organizational commitment, turnover intentions, nonwork satisfaction, and personal health are all areas for future inquiry. Lastly, examining the relationship between role polychronicity and the traditional five-factor model of personality (Costa & McCrae, 1992) is desirable to determine its discriminant and convergent validity and viability as a predictor in work-nonwork research. All of these future research suggestions provide ample opportunity to expedite the accumulation of research on individual differences and personality in the work-nonwork literature.

Finally, effects found for role integration facets have implications for research on work-nonwork practices and polices. Just as boundary flexibility, boundary permeability, and identity similarity exhibited different effects on work-nonwork outcomes, Kossek (2005) recently argued that work-family (work-nonwork) polices should be distinguished from one another based on (a) type of practice, (b) availability and access, (c) and actual use in order to examine differential effects on outcomes. Until recently, the majority of work-nonwork research has collapsed types of work-nonwork practices and policies together to examine their effects on outcomes. In line

with literature on the importance of P-E fit (e.g., Schneider, 2001), Kossek's (2005) arguments

should be extended to incorporate facets of role integration. It is possible that individual role

integration strategies play an important part in determining how employees structure their work

and nonwork domains within the limits of organizational work-nonwork policies. In addition,

informal organizational support for using work-family (work-nonwork) policies has been related

to many work-nonwork outcomes (Allen, 2001; Jahn, Thompson, & Kopelman, 2003;

Thompson, Beauvis, & Lyness, 1999) and should be investigated from the perspective of

receiving informal support for integrating work and nonwork domains.

Implications for Practice

As organizations attempt to attract and retain employees, they have introduced many

policies and practices designed to help people succeed at balancing their work and nonwork lives

(Bohl, 1996). This study suggests that organizations should not blindly adopt these policies

without developing a better understanding of their implications for employees' ability to manage

the boundary between work and nonwork. Organizations that wish to decrease work-nonwork

conflict of their employees and enhance spillover of benefits to work should implement practices

that actually do so. Therefore, this study's findings suggest organizations should allocate

resources toward practices that facilitate work flexibility strategies (e.g., flextime, compressed

work weeks, time off during the workday to attend to nonwork responsibilities) and use caution

when adopting practices that exacerbate work permeability (e.g., telework, on-site childcare,

phone calls from nonwork contacts). However, because individual strategies to integrate or

segment play a central role in determining outcomes (Kossek et al., 2006; Kreiner, 2006), the

success or failure of work-nonwork practices hinges not only upon what type of practices are

adopted but also how individuals structure work and nonwork within the confines of those practices.

When designing work-nonwork initiatives, organizations should also keep in mind that employees have diverse commitments and may value other nonwork interests besides family. For example, although the total sample of employees in this study placed highest importance on family involvement ($\overline{X}$ = 4.51), they also valued leisure involvement ($\overline{X}$ = 3.70) and involvement in self-development ($\overline{X}$ = 3.50) even more so than they did work involvement ($\overline{X}$ = 3.47). Therefore, although family involvement may be the most salient nonwork domain for most employees, there are other nonwork domains that should also be considered in contrast to the work domain. Accordingly, Lobel and Kossek (1996) suggested organizations adopt policies and programs that address a broad spectrum of personal issues in addition to family.

Another important complement to work-nonwork practices that allow employees to engage in successful integration strategies is informal organizational support for nonwork. Studies show that an organizational climate supportive of nonwork pursuits is perhaps more important than tangible work-nonwork programs (Behson, 2005), and it likely contributes to enactment of work-nonwork integration behaviors. For example, a boss who expects subordinates to accept his/her phone calls on the weekend is forcing subordinates to involuntarily increase their level of nonwork permeability. Outside of support received within the organization, another viable source of support is from spouses or partners in role-sharing responsibilities. Weitzman (1992) reported that approximately three-quarters of women surveyed expected to share household and childrearing responsibilities equally with their partner or spouse. In many instances, these expectations are unrealistic given differences between the time women and men spend on household chores and childrearing activities, even in dual-career

marriages (e.g., Gerstel & Sarkisian, 2006; Hochschild, 1987). This spousal support, or lack thereof, may limit the opportunities working women have to segment their work and nonwork domains because they are the primary or sole source of liability for a large portion of the nonwork domain (i.e., family).

Findings for role polychronicity also have practical implications for organizations. It has been suggested that people could be trained to improve their task polychronicity abilities (Bluedorn, 2002). Therefore, it is reasonable to expect that employees could be trained to be more effective at simultaneously juggling work and nonwork demands. Similarly, Weitzman (1994) argues that women who are more realistic and adept at multi-role planning will be more successful. This implies that the more knowledge and information given to employees to prepare them for dealing with simultaneous demands across work-nonwork roles, the increased likelihood for success. Many organizations provide training on time management and prioritizing at work. However, it would benefit organizations and employees to move beyond just work considerations in an effort to prepare employees to effectively handle the multitude of work-nonwork responsibilities that accommodate high involvement in work and nonwork, especially within organizational contexts that demand a high degree of integration between both domains.

Limitations

This study has many limitations that should be given serious consideration. First, alternative models of causality were not tested. Thus, causality cannot be inferred. Specifically, work-nonwork outcomes (conflict, positive spillover) may cause individuals to integrate or segment their work and nonwork out of necessity just as likely as integration or segmentation strategies lead to conflict and/or positive spillover. Supporting this notion, Rau and Hyland

(2002) found that level of role conflict moderated the effect of telework and flextime availability on organizational attractiveness. These findings highlight the need for research using alternative causal models of antecedents and outcomes of work-nonwork conflict and positive spillover in order to disentangle questions of causality in work-nonwork research.

Another limitation of this study is that all data were collected using self-report measures, thus raising concerns about possible common method bias. Therefore, two analyses were conducted to examine possible common method bias. First, a single-factor CFA (c.f. Iverson & Maguire, 2000; Mossholder, Bennett, Kemery, & Wesolowski, 1998) was performed to test the hypothesis that a single factor accounts for all of the variance in the data. While this technique has been criticized for not being able to partial out method effects, it can be used as an initial diagnostic tool to determine if common method variance is a major problem (Podsakoff, MacKenzie, Lee, and Podsakoff, 2003). The single-factor model using the full sample and all measures demonstrated poor fit with the data (χ^2/df = 15051.74/2414, CFI = .20, TLI = .17, RMSEA = .12, SRMSR = .14), and the items on average accounted for only 13% of the variance in the single factor. These results provide some initial evidence that common method bias is not a major concern. Second, common method variance was examined using the "single unmeasured latent method factor" CFA approach demonstrated by Williams, Cote, and Buckley (1989) and recommended using the decision tree on ways to deal with method bias provided by Podsakoff et al. (2003). Although the model including latent measurement factors and a method factor exhibited good fit with the data (χ^2/df = 3287.91/2207, CFI = .93, TLI = .92, RMSEA = .04, SRMSR = .05) and actually fit the data better than the measurement model alone ($\Delta\chi^2_{(71)}$ = 260.97, p < .01), the average proportion of variance attributed to the measurement factors was substantially higher than the average proportion of variance attributed to the method factor (57%

vs. 3%, respectively). This provides further evidence that substantive relationships, and not common method bias, are likely responsible for this study's observed findings.

The method used to create the psychological involvement composite is another possible limitation of this study. Before conducting cluster analyses, the five-item psychological involvement scale was averaged to form a single-item composite. For nonwork psychological involvement, this method resulted in an average of all nonwork facets' single-item composite. An obvious disadvantage of this method is the loss of valuable item-level information by averaging (twice). However, the use of cluster analysis to determine groupings did not allow for a more fine-grained approach. As an alternative to cluster analysis, which is most appropriate for uni-dimensional scales, latent profile analysis (c.f. McLachlan & Peel, 2000) should be a consideration for future studies wishing to create groupings of individuals based on complex multi-dimensional latent constructs.

Similarly, this study suffers from conceptual oversimplification by collapsing all nonwork involvement subdomains into an overall measure of nonwork involvement. Treating nonwork involvement in this way contributes to the narrow perspective that work is central to an individual's life (Near et al., 1980) while all other aspects of life supposedly exhibit the same relationship with work and can be categorized as such (i.e., nonwork). While such an approach was outside the scope of this study, a more appropriate treatment of nonwork involvement is to create combinations of involvement along all life roles (work and nonwork) to test differential effects between work and a variety of nonwork subdomains as well as differences within the subdomains of nonwork.

A final limitation of this study is the possibility of suppression effects in some of the findings. A variable serves as a suppressor if it has no elements in common with the criterion

but does have irrelevant elements in common with the predictor (McNemar, 1969). If the predictor and suppressor are positively correlated, then the suppressor has a negative regression weight after inclusion in the regression equation (or in this study, the path model). According to this definition, some of the observed relationships found for positive spillover may be influenced by suppressor effects. While suppression effects may have changed the strength of some relationships, they did not influence the general findings of this study. Future research should examine integration effects together and separately to rule out suppression as well as potential masking effects of other predictor variables. At the very least, regression and path model parameter estimates should be closely inspected in unison with zero-order correlations to evaluate the potential for suppression as a cause of observed results.

Conclusion

Advances in technology have increased the ease by which work invades the nonwork domain, while at the same time employees are beginning to focus more of their energies into nonwork pursuits in addition to work pursuits (Snir & Harpaz, 2002). This study is a first step in understanding the effects of integrating work and nonwork for individuals highly involved in both domains. Although unexpected results were found, this study fills an important gap in the work-nonwork literature and hopefully provides a springboard for future research on role integration, role polychronicity, and work-nonwork involvement. Specifically, additional work is needed to further delineate the processes through which role integration operates to affect conflict and positive spillover between work and nonwork. Also, results from this study suggest that congruence between role integration and role polychronicity may be a key determinant of work-nonwork outcomes, and this relationship should be an area of further inquiry. Finally, future investigations in the field of work-nonwork should continue to incorporate a

comprehensive view of nonwork domains in order to understand how work relates to the rest of

individuals' lives outside of work.

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APPENDICES

Model Identification and Power in Structural Equation Modeling

Model Identification

$$df = [(m * (m + 1))/2] - (2 * m) - [(\xi *(\xi - 1))/2] - g - b - e \quad \text{(equation 7; Rigdon, 1994)}$$

where *m* is the number of manifest variables, ξ is the number of exogenous latent variables, *g* and *b* are the number of free terms in Γ and B, and *e* is the number of free error/disturbance terms allowed to covary. Substituting the appropriate values into equation 4 we get

$$df = [(36 * (36 + 1))/2] - (2 * 36) - [(4 *(4 - 1))/2] - 16 - 0 - 8$$

$$df = 564$$

Power Analysis in Structural Equation Modeling (MacCallum et al., 1996)

For test of not-close fit (i.e., if the model fit is actually extremely good, and you test the hypothesis that fit is not close, what is the likelihood of rejecting the null hypothesis at p<.05?). H0=.05, H1=.01; Power =.9, df = 564. Sample Size (of high/high involvement) needed = 80.

Total Sample size needed = 267 (80=3/10 * X).

APPENDIX B

Study Invitation

University Of Georgia Research Study: "Work and Nonwork Experiences"

As part of XXXX's commitment to employee personal and professional development, we have agreed to cooperate with the University of Georgia in a study on managing work and nonwork responsibilities. As part of this study, the University will survey employees from a wide range of companies about their work and nonwork experiences. Participation is entirely voluntary and confidential, and responses will only be accessed by the University staff working on this study. While the University will share overall results of the survey with the companies whose employees participate, no individual responses will be shared with anyone at XXX. The University offers anyone completing the survey the chance to enter a drawing to win 1 of 20 Amazon.com gift certificates ranging from $20-$75. If you would like to participate in the survey, click here: XXXXXXXXXX.

Please complete this survey within two weeks in order to ensure that your responses are included in the study. If you prefer to receive a paper version of the survey, or if you have any questions or comments, please feel free to contact Marcus Butts at the University of Georgia at 706-549-8723 or mmbutts@uga.edu.

APPENDIX C

Study Informed Consent

Thank you for taking the time to assist with this research project titled "Work and Nonwork Experiences." Upon completing the survey, you will have the opportunity to register for a drawing to win 1 of 20 Amazon.com gift certificates ranging from $20 - $75. Please be assured that responses to survey questions will remain confidential and be reported only in summary form for research purposes. Internet communications are insecure and there is a limit to the confidentiality that can be guaranteed due to technology itself. However, once the completed survey is received by the investigator, standard confidentiality procedures will be employed. If you prefer to receive and complete a paper version of this survey, please contact: Mr. Marcus Butts or Dr. Lillian Eby, Department of Psychology, University of Georgia, phone: 706-549-8723, email: (Mr. Butts) mmbutts@uga.edu, (Dr. Eby) leby@uga.edu.

Your participation is voluntary and by completing the survey you are indicating your informed consent to participate in this research. No discomfort or risks are foreseen by participating in this study. You may skip any questions you are uncomfortable answering, and you may quit the survey at any time. Please complete this survey within two weeks in order to ensure that your responses are included in the study. Thank you for your time and cooperation.

Additional questions or problems regarding your rights as a research participant should be addressed to the Institutional Review Board of the University of Georgia at 706-542-3199.

The survey should take approximately 20 minutes to complete, and you may begin by clicking the "Next" button below.

APPENDIX D

Behavioral Role Involvement Scale

Please indicate the average number of hours per week you spend on the following activities. Keep in mind that hours spent on one activity do not prohibit time spent simultaneously participating in another activity.

Work Activities. This is time specifically devoted to paid job tasks and responsibilities.

1. Work activities: _____hrs/week

Nonwork Activities. The following categories are for time spent in activities other than your work role.

1. Family activities (i.e., chores, childcare, elder care, time with family members or significant other): _____hrs/week

2. Community activities (e.g., local government, volunteering): _____hrs/week

3. Leisure activities (e.g., exercise, hobbies): _____hrs/week

4. Religious activities (e.g., attending church): _____hrs/week

5. Self-development activities (i.e., formal or informal education or self-improvement unrelated to work): _____hrs/week

6. Other activities (please describe): _____
    _____hrs/week

APPENDIX E

Psychological Role Involvement Scale

WORK INVOLVEMENT

1.	Some of the most important things that happen to me involve my present job.
2.	Many of my interests are centered around my job.
3.	To me, my job is a very large part of who I am.
4.	I am very much personally involved with my job.
5.	My job is a very important part of my life.

NONWORK INVOLVMENT

Family involvement ("Family" includes involvement with immediate family such as parents as well as spouse, children, or significant others)

1.	Some of the most important things that happen to me involve my family.
2.	Many of my interests are centered around my family.
3.	To me, my family is a very large part of who I am.
4.	I am very much personally involved with my family.
5.	My family is a very important part of my life.

Community involvement

1.	Some of the most important things that happen to me involve my community.
2.	Many of my interests are centered around my role in the community.
3.	To me, my role in the community is a very large part of who I am.
4.	I am very much personally involved in my community.
5.	My role in the community is a very important part of my life.

Leisure involvement

1.	Some of the most important things that happen to me involve my leisure activities.
2.	Many of my interests are centered around my leisure activities.
3.	To me, my leisure activities are a very large part of who I am.
4.	I am very much personally involved in my leisure activities.
5.	My leisure activities a very important part of my life.

Religious involvement

1.	Some of the most important things that happen to me involve my religious experiences.
2.	Many of my interests are centered around my religion.
3.	To me, my religious experiences are a very large part of who I am.
4.	I am very much personally involved in my religion.
5.	My religion is a very important part of my life.

Involvement in self-development

1.	Some of the most important things that happen to me involve my self-development experiences.
2.	Many of my interests are centered around my continued self-development.
3.	To me, my self-development is a very large part of who I am.
4.	I am very much personally involved in my continued self-development.
5.	My personal self-development is a very important part of my life.

APPENDIX F

Boundary Flexibility Scale

Work boundary flexibility

1. **I arrive and depart from work when I want in order to meet my nonwork responsibilities.** [a]
2. **When the need arises, I leave work early to attend to nonwork-related issues.** [a]
3. **If something comes up in my nonwork life, it is alright if I arrive to work late.** [a]
4. **While at work, I have the freedom to stop what I am doing to meet responsibilities related to my nonwork life.** [a]
5. I am free to work the hours that are best for my schedule. [b d]
6. **I take a day off work to meet nonwork demands, when I need to.** [b]
7. There is a lot of flexibility in my work schedule. [b d]
8. I often work outside of the office during regular office hours. [b]

Nonwork boundary flexibility

1. **My nonwork responsibilities do not prevent me from adjusting my work schedule (for example, going in early or staying late to finish work-related responsibilities).** [a]
2. **When the need arises, I work late without affecting my nonwork responsibilities.** [a]
3. **My nonwork responsibilities do not prevent me from going into work early when the need arises.** [a]
4. **My nonwork responsibilities do not prevent me from going into work an extra day in order to meet work responsibilities.** [a]
5. I rearrange my nonwork schedule to meet the demands of my work. [a d]
6. **I arrive and depart from nonwork activities when I want in order to meet work responsibilities.** [a]
7. I am free to carry out my nonwork responsibilities during the hours that are best for my schedule. [c d]
8. I often complete work tasks during time normally devoted to my nonwork activities. [c]

Note. Items in bold were retained for the final version of the scale.
[a] adapted from Matthews and Barnes-Farrell (2004)
[b] adapted from Clark (2001)
[c] adapted from Clark (2002)
[d] item deleted based on CFA results

APPENDIX G

Boundary Permeability Scale

Work boundary permeability

1. I get visits from nonwork contacts while I am at work. [a]
2. I think about nonwork-related issues when I am at work. [a]
3. I receive calls related to my nonwork life when I am at work. [a]
4. When completing work tasks, I have to deal with nonwork-related interruptions. [b]
5. I bring friends from my nonwork life to my workplace. [c]

Nonwork boundary permeability

1. I get visits from work contacts during nonwork activities. [a]
2. I think about work-related issues when I am doing nonwork activities. [a]
3. I receive calls related to work when I am doing nonwork activities. [a]
4. When engaging in nonwork activities, I have to deal with work-related interruptions. [b]
5. I carry a work-related pager, Blackberry, or cell phone with me so that I can be available to my job when I am doing nonwork activities. [c]

Note. Items in bold were retained for the final version of the scale.
[a] adapted from Clark (2002)
[b] new item created for the purpose of the study
[c] adapted from Einspahr (2003)

Identity Similarity Scale

Interaction style

1. I consciously change the way I talk when I go between my work and nonwork roles. [R] [a]
2. I treat people differently depending on whether I am doing nonwork activities or work activities. [R] [a]
3. I act like I am two different people when I am at work versus outside of work. [R] [a]
4. To be successful in my job, I need to treat people at work differently than I treat people outside of work. [R] [a]

Values, beliefs, and attitudes

1. I am allowed to express my true values in both my work life and nonwork life. [b]
2. Sometimes my work role or nonwork role requires me to go along with things I don't really believe in. [R] [b]
3. I am able to be true to myself in both my work role and nonwork roles. [b]
4. In some of my roles (work or nonwork), I can't say what I really think. [R] [b]
5. My attitude remains the same across both my work and nonwork roles. [b]
6. I feel free to express my beliefs across both my work and nonwork roles. [b]

Social identity

1. I work with people that I also interact with in my nonwork life. [c]
2. The people I socialize with at work are the same people I socialize with in my nonwork life. [c]

Note. Items in bold were retained for the final version of the scale. [R] = Reverse scored.
[a] adapted from Einspahr (2003)
[b] adapted from Miller (2000)
[c] new item created for the purpose of the study

Role Polychronicity Scale

1.	**I like to juggle work and nonwork activities at the same time.**
2.	**I would rather complete all my work (or nonwork) tasks at one sitting rather than using that time for both work and nonwork tasks. [R]**
3.	**I believe people should try to complete work and nonwork tasks simultaneously.**
4.	**I prefer to focus on tasks from one facet of life—work or nonwork—at a time. [R]**
5.	**I believe people do their best work when they have both work and nonwork tasks to complete.**
6.	**Within a given time frame, I believe it is best to complete all tasks from one area—work or nonwork—before starting tasks related to the other area. [R]**
7.	**At one sitting, I would rather complete some tasks related to both my work role and nonwork role than complete all tasks for one role or the other.**
8.	It is hard for me to start something new for one role—work or nonwork—if there are things I have not finished for the other role. [R]
9.	**When I have several things to do for work and nonwork, I prefer to spend a little bit of time on each—moving back and forth from one facet of life to the other.**
10.	I find it difficult to switch gears from work tasks to nonwork tasks, and vice versa. [R]

Note. Items in bold were retained for the final version of the scale. [R] = Reverse scored.

Work-Nonwork Conflict Scale

Time-based work-to-nonwork conflict

1.	My work keeps me from nonwork activities more than I would like.
2.	The time I must devote to my job keeps me from participating equally in nonwork responsibilities and activities.
3.	I have to miss nonwork activities due to the amount of time I must spend on work responsibilities.

Strain-based work-to-nonwork conflict

1.	When I finish working I am often too frazzled to participate in nonwork activities.
2.	I am often so emotionally drained from work that it prevents me from participating in my nonwork activities.
3.	Due to all the pressures at work, sometimes when I finish working I am too stressed to do the other things I enjoy.

Time-based nonwork-to-work conflict

1.	The time I spend on nonwork responsibilities often interferes with my work responsibilities.
2.	The time I spend in activities related to my nonwork life often causes me not to spend time in activities at work that could be helpful to my career.
3.	I have to miss work activities due to the amount of time I must spend on nonwork responsibilities.

Strain-based nonwork-to-work conflict

1.	Due to stress from my nonwork life, I am often preoccupied with nonwork matters at work.
2.	Because I am often stressed from my nonwork responsibilities, I have a hard time concentrating on my work.
3.	Tension and anxiety from my nonwork life often weakens my ability to do my job.

Work-Nonwork Positive Spillover Scale

Instrumental positive spillover from work to nonwork (behavior-based)

1.	Skills developed at work help me in my nonwork life.
2.	Successfully performing tasks at work helps me to more effectively accomplish nonwork tasks.
3.	Behaviors required by my job lead to behaviors that assist me in my nonwork life.
4.	Carrying out my nonwork-related responsibilities is made easier by using behaviors performed at work.

Instrumental positive spillover from work to nonwork (value-based)

1.	Values developed at work make me a better person in my nonwork life.
2.	I apply the principles my workplace values in my nonwork situations.
3.	Values that I learn through my work experiences assist me in fulfilling my nonwork-related responsibilities.

Affective positive spillover from work to nonwork

1.	When things are going well at work, my outlook regarding my nonwork life is improved.
2.	Being in a positive mood at work helps me to be in a positive mood at nonwork activities.
3.	Being happy at work improves my spirits at nonwork activities.
4.	Having a good day at work allows me to be optimistic in my nonwork life.

Instrumental positive spillover from nonwork to work (behavior-based)

1.	Skills developed in my nonwork life help me in my job.
2.	Successfully performing tasks in my nonwork life helps me to more effectively accomplish tasks at work.
3.	Behaviors required in my nonwork life lead to behaviors that assist me at work.
4.	Carrying out my work responsibilities is made easier by using behaviors performed as part of my nonwork life.

Instrumental positive spillover from nonwork to work (value-based)

1.	Values developed in my nonwork life make me a better employee.
2.	I apply the principles valuable in my nonwork life to work situations.
3.	Values that I learn through my nonwork-related experiences assist me in fulfilling my work responsibilities.

Affective positive spillover from nonwork to work

1.	When things are going well in my nonwork life, my outlook regarding my job is improved.
2.	Being in a positive mood at nonwork activities helps me to be in a positive mood at work.
3.	Being happy at nonwork activities improves my spirits at work.
4.	Having a good day in my nonwork life allows me to be optimistic at work.

Table 1

Role Integration Facets and Examples

Role integration facet	Directionality	Theoretical definition	Behavioral example
Nonwork flexibility	W-to-NW	Degree to which the spatial and/or temporal boundary around nonwork allows an individual to complete nonwork tasks in a way that takes into consideration personal demands of work. Work is given precedence over nonwork.	Skipping church or family activities on Sunday to go to work and finish up work-related responsibilities.
Work flexibility	NW-to-W	Degree to which the spatial and/or temporal boundary around work allows an individual to complete work tasks in a way that takes into consideration personal demands of nonwork. Nonwork is given precedence over work.	Leaving work for two hours during the workday to go to the gym and exercise, and then going back to work.
Nonwork permeability	W-to-NW	Extent to which the nonwork role allows psychological (mental) or behavioral (real) intrusions or interruptions from the work domain.	Receiving a phone call from your boss and talking to him/her while playing golf on a Saturday with friends.
Work permeability	NW-to-W	Extent to which the work role allows psychological (mental) or behavioral (real) intrusions or interruptions from the nonwork domain.	Thinking about your sick child while at work.
Identity similarity	W-to-NW & NW-to-W	Extent to which work and nonwork role identities are similar in terms of core and peripheral features of each role such as interaction style, values, beliefs, and attitudes.	Treating your boss and pastor in the same verbal and physical manner.

Note. W-to-NW = Work-to-Nonwork. NW-to-W = Nonwork-to-Work.

Table 2

Summary of Study Hypotheses and Objectives

	Hypothesis summary	Objective
1a	Work-to-nonwork role integration will be positively related to work-to-nonwork conflict.	To examine the domain specific effects of role integration on work-nonwork conflict.
1b	Nonwork-to-work role integration will be positively related to nonwork-to-work conflict.	
2a	Work-to-nonwork role integration will be positively related to work-to-nonwork positive spillover.	To examine the domain specific effects of role integration on work-nonwork positive spillover.
2b	Nonwork-to-work role integration will be positively related to nonwork-to-work positive spillover.	
3a	Work-to-nonwork role integration will have a stronger effect on work-to-nonwork instrumental spillover than affective spillover.	To investigate differential effects on instrumental and affective positive spillover.
3b	Nonwork-to-work role integration will have a stronger effect on nonwork-to-work instrumental spillover than affective spillover.	
4a	Role polychronicity will weaken the relationship between work-to-nonwork role integration and work-to-nonwork conflict.	To investigate the moderating influence of role polychronicity on proposed relationships.
4b	Role polychronicity will weaken the relationship between nonwork-to-work role integration and nonwork-to-work conflict.	
5a	Role polychronicity will strengthen the relationship between work-to-nonwork role integration and work-to-nonwork positive spillover	
5b	Role polychronicity will strengthen the relationship between nonwork-to-work role integration and nonwork-to-work positive spillover	
6	Hypotheses 1-5 will receive stronger support in groupings of high work/high nonwork involvement than other groupings of work-nonwork involvement.	To establish the validity of the proposed framework for different groupings of involvement.
7a	Hypotheses 1-5 will receive stronger support for the high work/high nonwork behavioral involvement group than the psychological involvement group.	To test the applicability of competing conceptualizations of involvement for the proposed framework.
7b	Hypotheses 1-5 will receive stronger support for the high work/high nonwork psychological involvement group than the behavioral involvement group.	

Table 3

Confirmatory Factor Analysis Fit Indices for the Total Sample (N = 377)

Measure	Model	χ^2	*df*	CFI	TLI	RMSEA	SRMSR
Work flexibility	1 factor	242.23[**]	14	.77	.66	.21	.09
Work permeability	1 factor	3.80	2	.99	.98	.05	.02
Nonwork flexibility	1 factor	125.11[**]	14	.87	.80	.15	.08
Nonwork permeability	1 factor	10.50	5	.99	.99	.05	.02
Role polychronicity	1 factor	78.20[**]	20	.93	.91	.09	.05
Work flexibility [a]	1 factor	21.25[**]	5	.97	.93	.09	.04
Nonwork flexibility [a]	1 factor	20.23[**]	5	.98	.95	.09	.05

Note. df = model degrees of freedom, CFI = Comparative Fit Index, TLI = Tucker-Lewis Index, RMSEA = root mean square error of approximation, SRMSR = standardized root mean square residual.

[a] revised measure after dropping item 5 and item 7

[**] *p* < .01

Table 4

Confirmatory Factor Analysis Scale Dimensionality Results for the Total Sample (N = 377)

Model	χ^2	*df*	CFI	TLI	RMSEA	SRMSR	Model comparisons	$\Delta\chi^2$	Δdf
Identity similarity									
1. 2 correlated factors	**116.36**[**]	**34**	**.95**	**.93**	**.08**	**.05**			
2. 2 orthogonal factors	171.50[**]	35	.92	.89	.10	.17	1 vs. 2	55.14[**]	1
3. 1 factor	213.42[**]	35	.89	.86	.12	.31	1 vs. 3	97.06[**]	1
W-to-NW conflict									
1. 2 correlated factors	**20.05**[*]	**8**	**.99**	**.99**	**.06**	**.02**			
2. 2 orthogonal factors	243.34[**]	9	.88	.80	.26	.38	1 vs. 2	223.29[**]	1
3. 1 factor	32.85[**]	9	.98	.97	.09	.14	1 vs. 3	12.80[*]	1
NW-to-W conflict									
1. 2 correlated factors	**17.50**[*]	**8**	**.99**	**.99**	**.06**	**.03**			
2. 2 orthogonal factors	171.32[**]	9	.87	.78	.22	.28	1 vs. 2	153.82[**]	1
3. 1 factor	142.17[**]	9	.89	.82	.20	.45	1 vs. 3	124.67[**]	1
W-to-NW spillover									
1. 3 correlated factors	**83.31**[**]	**41**	**.99**	**.98**	**.05**	**.03**			
2. 3 orthogonal factors	383.32[**]	44	.89	.86	.14	.31	1 vs. 2	300.01[**]	3
3. 2 correlated factors	374.84[**]	43	.89	.86	.14	.06	1 vs. 3	291.53[**]	2
NW-to-W spillover									
1. 3 correlated factors	**127.72**[**]	**41**	**.97**	**.96**	**.07**	**.04**			
2. 3 orthogonal factors	442.32[**]	44	.87	.84	.16	.32	1 vs. 2	314.60[**]	3
3. 2 correlated factors	355.41[**]	43	.90	.87	.14	.06	1 vs. 3	227.69[**]	2

Note. Model in bold indicates best fitting model. *df* = model degrees of freedom, CFI = Comparative Fit Index, TLI = Tucker-Lewis Index, RMSEA = root mean square error of approximation, SRMSR = standardized root mean square residual, W-to-NW = work-to-nonwork, NW-to-W = nonwork-to-work.
[**]*p* < .01 [*]*p* < .05

Table 5

K-Means Cluster Analysis Results

Involvement type	Cluster size	Final cluster centers	
		Work	Nonwork
Behavioral involvement			
Cluster 1 (high work/high nonwork)	193	43.89	58.86
Cluster 2 (high work/low nonwork)	184	44.82	31.67
Psychological involvement			
Cluster 1 (high work/high nonwork)	160	3.83	3.80
Cluster 2 (high work/low nonwork)	105	3.82	2.96
Cluster 3 (low work/high nonwork)	112	2.61	3.41

Note. For behavioral involvement (hours/week), values ranged from 30 to 77 for work and 6 to 87 for nonwork. For psychological involvement (1 – 5 Likert scale), values ranged from 1.20 to 5.00 for work and 1.88 to 4.84 for nonwork.

Table 6

ANOVA Results for Study Variables by Involvement Cluster

Variable	Behavioral involvement $F_{(1,375)}$	Psychological involvement $F_{(2,374)}$
Nonwork flexibility	1.94	4.66[*]
Nonwork permeability	.21	9.14[**]
Work flexibility	1.85	.07
Work permeability	3.07	2.80
Identity similarity-interaction style	.73	3.98[*]
Identity similarity-values, beliefs, att.	.59	6.80[**]
Role polychronicity	3.21	1.66
W-to-NW conflict-time	5.88[*]	1.12
W-to-NW conflict-strain	9.54[**]	1.20
W-to-NW inst. spill.-behavior	1.60	3.37[*]
W-to-NW inst. spill.-value	1.40	13.61[**]
W-to-NW aff. spill.	.01	9.60[**]
NW-to-W conflict-time	6.92[**]	.57
NW-to-W conflict-strain	.06	2.40
NW-to-W inst. spill.-behavior	2.07	6.57[**]
NW-to-W inst. spill.-value	2.17	7.55[**]
NW-to-W aff. spill.	.83	3.02[*]

Note. W-to-NW = work-to-nonwork, NW-to-W = nonwork-to-work.
[**] $p < .01$ [*] $p < .05$

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Table 7

Measurement Model Standardized Factor Loadings for Final Scale Items

	Work-to-nonwork model		Nonwork-to-work model	
	H-W/H-NW	H-W/H-NW	H-W/H-NW	H-W/H-NW
Measure	Beh. Inv.	Psych. Inv.	Beh. Inv.	Psych. Inv.
Boundary flexibility				
Item 1	.78**	.58**	.58**	.56**
Item 2	.74**	.70**	.72**	.62**
Item 3	.85**	.71**	.79**	.69**
Item 4	.70**	.83**	.74**	.78**
Item 6	.48**	.42**	.51**	.38**
Boundary permeability				
Item 1	.50**	.54**	.48**	.56**
Item 2	.37**	.47**	.61**	.53**
Item 3	.86**	.96**	.69**	.63**
Item 4	.92**	.92**	.80**	.67**
Item 5	.71**	.70**	--	--
Identity similarity – interaction style				
Item 1	.77**	.64**	.77**	.64**
Item 2	.86**	.87**	.85**	.87**
Item 3	.78**	.77**	.79**	.77**
Item 4	.84**	.75**	.84**	.75**
Identity similarity – values, beliefs, att.				
Item 1	.78**	.72**	.79**	.72**
Item 2	.55**	.57**	.56**	.59**
Item 3	.81**	.64**	.81**	.64**
Item 4	.67**	.62**	.67**	.63**
Item 5	.65**	.59**	.64**	.57**
Item 6	.81**	.69**	.80**	.68**
W-NW conflict – time				
Item 1	.88**	.86**	.75**	.79**
Item 2	.88**	.94**	.68**	.69**
Item 3	.85**	.84**	.78**	.77**
W-NW conflict – strain				
Item 1	.86**	.86**	.85**	.84**
Item 2	.93**	.94**	.94**	.96**
Item 3	.85**	.84**	.86**	.80**
W-NW inst. spillover – behavior				
Item 1	.83**	.82**	.74**	.71**
Item 2	.86**	.86**	.77**	.70**
Item 3	.87**	.84**	.90**	.89**
Item 4	.90**	.89**	.80**	.83**
W-NW inst. spillover – value				
Item 1	.81**	.76**	.81**	.86**
Item 2	.90**	.89**	.89**	.87**
Item 3	.91**	.90**	.86**	.81**
W-NW aff. spillover				
Item 1	.74**	.67**	.77**	.77**
Item 2	.87**	.93**	.92**	.92**
Item 3	.92**	.95**	.93**	.94**
Item 4	.85**	.81**	.83**	.82**

Note. H-W/H-NW = high work/high nonwork group.
** $p < .01$

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Table 8

Standardized Factor Loadings for Role Polychronicity Final Scale Items

Role polychronicity	H-W/H-NW behavioral involvement	H-W/H-NW psychological involvement
Item 1	.55**	.53**
Item 2	.60**	.63**
Item 3	.75**	.66**
Item 4	.75**	.79**
Item 5	.53**	.52**
Item 6	.48**	.56**
Item 7	.60**	.68**
Item 9	.59**	.73**

Note. H-W/H-NW = high work/high nonwork group, fit statistics for behavioral involvement CFA model are (χ^2/df = 50.07/20, CFI = .93, TLI = .90, RMSEA = .09, SRMSR = .06), fit statistics for psychological involvement CFA model are (χ^2/df = 40.45/20, CFI = .95, TLI = .93, RMSEA = .08, SRMSR = .05).
**$p < .01$

Table 9

Measurement and Structural Model Fit Indices by Involvement Group: Work-to-Nonwork Directionality

Involvement Group	χ^2	*df*	CFI	TLI	RMSEA	SRMSR	Model comp.	$\Delta\chi^2$	Δdf
			Hypothesized Groups						
Behavioral involvement – high W/high NW									
1. W-to-NW measurement model	802.34**	593	.95	.95	.04	.06			
2. W-to-NW structural model (no controls)	810.98**	599	.95	.95	.04	.06	1 vs. 2	8.64 n.s.	6
3. W-to-NW structural model (w/ controls)	974.51**	734	.95	.94	.04	.07			
Psychological involvement – high W/high NW									
1. W-to-NW measurement model	879.06**	593	.92	.91	.05	.07			
2. W-to-NW structural model (no controls)	889.49**	599	.92	.91	.05	.07	1 vs. 2	10.43 n.s.	6
3. W-to-NW structural model (w/ controls)	1049.20**	734	.92	.91	.05	.07			
			Alternative Groups						
Behavioral involvement – high W/low NW									
1. W-to-NW structural model (w/ controls)	1067.21**	734	.92	.92	.05	.07			
Psychological involvement – high W/low NW									
1. W-to-NW structural model (w/ controls)	984.91**	734	.90	.89	.06	.08			
Psychological involvement – low W/high NW									
1. W-to-NW structural model (w/ controls)	1028.51**	734	.90	.89	.06	.08			

Note. Behavioral involvement *N*s are 193 (high W/high NW), 184 (high W/low NW). Psychological involvement *N*s are 160 (high W/low NW), 105 (high W/low NW), and 112 (low W/high NW). *df* = model degrees of freedom, CFI = Comparative Fit Index, TLI = Tucker-Lewis Index, RMSEA = root mean square error of approximation, SRMSR = standardized root mean square residual, Model comp. = model comparison, W = work, NW = nonwork, W-to-NW = work-to-nonwork, w/ = with.
n.s. not significant $\Delta\chi^2$, $p < .05$
** $p < .01$ * $p < .05$

Table 10

Measurement and Structural Model Fit Indices by Involvement Group: Nonwork-to-Work Directionality

Involvement Group	χ^2	*df*	CFI	TLI	RMSEA	SRMSR	Model comp.	$\Delta\chi^2$	Δdf
				Hypothesized Groups					
Behavioral involvement – high W/high NW									
1. NW-to-W measurement model	821.65**	558	.93	.92	.05	.06			
2. NW-to-W structural model (no controls)	834.36**	564	.93	.92	.05	.06	1 vs. 2	12.71*	6
Psychological involvement – high W/high NW									
1. NW-to-W measurement model	850.38**	558	.90	.88	.06	.06			
2. NW-to-W structural model (no controls)	871.09**	564	.89	.88	.06	.07	1 vs. 2	20.71**	6
				Alternative Groups					
Behavioral involvement – high W/low NW									
1. NW-to-W structural model (no controls)	844.54**	564	.92	.91	.05	.07			
Psychological involvement – high W/low NW									
1. NW-to-W structural model (no controls)	810.00**	564	.89	.88	.06	.09			
Psychological involvement – low W/high NW									
1. NW-to-W structural model (no controls)	814.26**	564	.89	.88	.06	.08			

Note. Behavioral involvement *N*s are 193 (high W/high NW), 184 (high W/low NW). Psychological involvement *N*s are 160 (high W/low NW), 105 (high W/low NW), and 112 (low W/high NW). *df* = model degrees of freedom, CFI = Comparative Fit Index, TLI = Tucker-Lewis Index, RMSEA = root mean square error of approximation, SRMSR = standardized root mean square residual, Model comp. = model comparison, W = work, NW = nonwork, NW-to-W = nonwork-to-work, w/ = with.
** $p < .01$ * $p < .05$

Table 11

Correlations Between Possible Control Variables and Outcome Variables: High Work/High Nonwork Involvement and Hours Groups Combined

Variable	Work-to-nonwork outcomes					Nonwork-to-work outcomes				
	Conflict-time	Conflict-strain	Inst. spill.-behav.	Inst spill.-value	Aff. spill.	Conflict-time	Conflict-strain	Inst. spill.-behav.	Inst spill.-value	Aff. spill.
Gender	.03	−.08	.05	.05	.04	.09	.08	−.10	−.07	−.04
Race	−.02	−.03	.00	−.13*	−.03	.10	.09	−.05	−.05	.04
Age	.02	.02	−.02	−.01	−.10	.04	−.04	−.09	.06	−.04
Marital status	−.16*	−.02	−.04	−.02	−.03	−.04	.10	−.06	−.10	−.08
Education level	.17**	.08	.00	−.06	.05	.02	−.01	.05	.05	.06
Employed spouse	.11	.14	−.01	.03	.06	−.04	−.06	.07	.06	−.02
Paid childcare	.08	.10	.04	−.08	.14	.07	.02	.05	−.03	.03
Num. of children	.13*	.05	.00	−.09	−.02	.23**	.09	−.08	−.05	.02
Organization	.11	.01	−.04	−.06	−.03	−.09	−.08	.06	.02	−.03
Employ. status	.16**	.16**	−.07	−.10	.09	.02	.00	−.06	−.07	−.03
Org. tenure	.12	.22**	−.06	−.03	−.14*	.05	.04	−.16*	−.03	−.07
Job tenure	.08	.12	−.05	.02	−.15*	.07	−.01	−.16*	.00	−.12
Salary	.08	.12	−.04	−.09	.05	.10	.00	−.07	.03	.00
Super. respon.	.16**	.07	.00	.02	.13*	−.07	−.08	.00	.08	−.02
Relative satis.	−.55**	−.44**	.21**	.21**	.05	−.06	−.06	.09	.03	.19**

Note. *N* ranges from to 202 to 270. Gender = female (0), male (1); Race = non-Caucasian (0), Caucasian (1); Marital status = married (0), single (1); Education = some high school (1), high school degree/GED (2), some college (3), bachelors degree (4), masters degree (5), doctorate or equivalent (6); Employed spouse = spouse employed outside the home (0 = no, 1 = yes); Paid childcare = paid childcare assistance (0 = no, 1 = yes); Num. of children = number of children under that age of 18 living at home; Organization = organization in sample (0 = Organization A, 1 = Organization B); Employ. status = employment status (0 = full-time hourly, 1 = full-time salaried); Org. tenure = Organizational tenure in months; Job tenure = number of months in current job; Super. respon. = supervisory responsibility for other employees (0 = no, 1 = yes); Relative satis. = satisfaction with time devoted to work relative to nonwork activities.
**p < .01 *p < .05

Table 12

Means, Standard Deviations, and Intercorrelations Among Study Variables: High Work/High Nonwork Behavioral Involvement

Group

	Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1.	Nonwork flexibility	3.59	.76																
2.	Nonwork permeability	2.84	.83	.16*															
3.	Work flexibility	3.28	.77	.11	.10														
4.	Work permeability	2.85	.71	-.10	.12	.38**													
5.	Id. sim.-IS	3.39	.95	.11	-.13	.13	-.06												
6.	Id. sim.-VBA	3.28	.79	.25**	-.10	.11	-.09	.46**											
7.	Role polychronicity	2.48	.58	.13	.18*	.10	.17*	.01	.13										
8.	W-to-NW con.-time	2.96	1.03	-.25**	.41**	-.05	.11	-.34**	-.45**	.05									
9.	W-to-NW con.-strain	2.77	1.03	-.22**	.34**	-.15*	.02	-.35**	-.50**	-.05	.67**								
10.	W-to-NW ins. sp.-beh.	3.66	.73	.16*	-.03	.13	-.08	.10	.26**	.16*	-.21**	-.28**							
11.	W-to-NW ins. sp.-value	3.45	.80	.26**	-.01	.10	-.12	.10	.40**	.15*	-.25**	-.25**	.65**						
12.	W-to-NW aff. sp.	4.07	.61	.09	.02	-.02	-.09	-.11	.08	.04	-.02	.01	.36**	.39**					
13.	NW-to-W con.-time	2.11	.72	-.44**	-.14*	.16*	.22**	-.07	-.23**	.00	.21**	.18*	-.16*	-.15*	-.10				
14.	NW-to-W con.-strain	1.92	.75	-.23**	-.14*	.05	.23**	-.17*	-.20**	.12	.11	.16*	-.08	-.03	-.02	.55**			
15.	NW-to-W ins. sp.-beh.	3.88	.60	.14*	-.02	.00	-.10	.09	.11	.00	-.11	-.11	.25**	.10	.30**	-.19**	-.24**		
16.	NW-to-W ins. sp.-value	4.08	.66	.20**	.01	.00	-.16*	.10	.16*	-.02	-.05	-.06	.19**	.15*	.36**	-.21**	-.23**	.69**	
17.	NW-to-W aff. sp.	3.98	.65	.12	.00	.09	.03	.01	.21**	.01	-.12	-.12	.32**	.31**	.36**	-.03	.00	.42**	.44**

Note. N = 193. W-to-NW = work-to-nonwork, NW-to-W = nonwork-to-work, Id. sim.-IS = identity similarity-interaction style, Id. sim.-VBA = identity similarity-values, beliefs, attitudes.
**p < .01 *p < .05

Table 13

Means, Standard Deviations, and Intercorrelations Among Study Variables: High Work/High Nonwork Psychological Involvement

Group

	Variable	*M*	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1.	Nonwork flexibility	3.77	.70																
2.	Nonwork permeability	3.00	.89	.00															
3.	Work flexibility	3.22	.75	.14	.06														
4.	Work permeability	2.72	.66	-.11	.10	.40**													
5.	Id. sim.-IS	3.58	.86	.05	-.06	.22**	.08												
6.	Id. sim.-VBA	3.44	.70	.22**	-.14	.11	.03	.35**											
7.	Role polychronicity	2.54	.63	-.02	.15	.13	.24**	.12	.17*										
8.	W-to-NW con.-time	3.08	1.01	-.26**	.44**	-.08	.10	-.06	-.30**	-.02									
9.	W-to-NW con.-strain	2.93	1.07	-.22	.37**	-.09	.05	-.06	-.37**	-.10	.61**								
10.	W-to-NW ins. sp.-beh.	3.78	.72	.10	-.02	.11	.05	.00	.25**	.14	-.06	-.17*							
11.	W-to-NW ins. sp.-value	3.71	.71	.23**	.00	.00	-.05	-.05	.30**	.04	-.07	-.09	.70**						
12.	W-to-NW aff. sp.	4.14	.60	.00	.03	-.10	-.10	-.15	.03	-.04	.11	.15	.33**	.40**					
13.	NW-to-W con.-time	1.99	.69	-.34**	-.13	.12	.19	-.07	-.27**	.00	.12	.07	-.08	-.14	-.05				
14.	NW-to-W con.-strain	1.87	.73	-.15	-.12	.21**	.35**	-.05	-.18*	.01	.08	.10	-.07	-.05	-.15	.66**			
15.	NW-to-W ins. sp.-beh.	3.97	.54	.08	.01	-.07	-.16*	.08	.18*	-.04	-.05	-.02	.33**	.25**	.33**	-.31**	-.40**		
16.	NW-to-W ins. sp.-value	4.18	.55	.03	.01	-.02	-.27**	.07	.06	-.17*	.03	.04	.13	.14	.28**	-.23**	-.36**	.62**	
17.	NW-to-W aff. sp.	4.04	.59	.05	-.07	.08	.06	-.11	.19*	-.09	-.06	-.10	.43**	.36**	.42**	-.04	-.08	.35**	.33**

Note. N = 160. W-to-NW = work-to-nonwork, NW-to-W = nonwork-to-work, Id. sim.-IS = identity similarity-interaction style, Id. sim.-VBA = identity similarity-values, beliefs, attitudes.

**p < .01 *p < .05

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Table 14

Work-to-Nonwork Structural Model Results Before Control Variables Included for High

Work/High Nonwork Involvement Groups

	Outcome variable				
Latent predictor	W-to-NW conflict-time	W-to-NW conflict-strain	W-to-NW ins. spill.-beh.	W-to-NW ins. spill.-value	W-to-NW aff. spill.
High work/high nonwork behavioral involvement group (*N* = 193)					
Nonwork flexibility	$-.24^{**}$	$-.15^{*}$	.08	.12	.03
Nonwork permeability	$.44^{**}$	$.34^{**}$	$-.07$	$-.02$	$-.03$
Identity similarity-IS	$-.12$	$-.13$	$-.06$	$-.12$	$-.20^{*}$
Identity similarity-VBA	$-.29^{**}$	$-.39^{**}$	$.31^{**}$	$.47^{**}$	.17
Variable R^2	.47	.44	.11	.23	.04
High work/high nonwork psychological involvement group (*N* = 160)					
Nonwork flexibility	$-.21^{*}$	$-.13$	$-.04$	.11	$-.10$
Nonwork permeability	$.41^{**}$	$.32^{**}$	.08	.09	.09
Identity similarity-IS	.05	.07	$-.12$	$-.22^{*}$	$-.19$
Identity similarity-VBA	$-.22^{*}$	$-.36^{**}$	$.39^{**}$	$.46^{**}$	.19
Variable R^2	.32	.29	.12	.21	.05

Note. All parameter estimates reported are standardized. W-to-NW = work-to-nonwork, IS = interaction style, VBA = values, beliefs, attitudes.
$^{**}p < .01$ $^{*}p < .05$

Table 15

Structural Model Results by Work-Nonwork Directionality: High Work/High Nonwork

Behavioral Involvement Group (N = 193)

Predictor	Outcome variable				
	W-to-NW conflict-time	W-to-NW conflict-strain	W-to-NW inst. spill.-behavior	W-to-NW inst. spill.-value	W-to-NW aff. spill.
Model 1 (control variables)					
Employment status	−.01	.05	--	--	--
Org. tenure	--	.11*	--	--	−.13
Super. respon.	−.01	--	--	--	.16*
Relative satis.	−.32**	−.16*	.17*	.08	--
Model 1 (main effects)					
Nonwork flexibility	−.19**	−.10	.04	.11	.03
Nonwork permeability	.41**	.30**	−.04	−.01	−.07
Identity similarity-IS	−.12	−.15*	−.07	−.13	−.15
Identity similarity-VBA	−.21**	−.34**	.26**	.44**	.13
Variable R^2	.52	.44	.13	.23	.07
Model 2 (latent interactions)					
NW Flex*Polychronicity	.19	.01	−.10	−.53*	−.03
NW Perm*Polychronicity	−.05	−.35	.54*	.27	−.17
Id. sim.-IS*Polychronicity	−.23	−.11	−.17	−.11	.18
Id. sim.-VBA*Polychronicity	.09	−.01	−.23	−.39*	−.02

Predictor	Outcome variable				
	NW-to-W conflict-time	NW-to-W conflict-strain	NW-to-W inst. spill.-behavior	NW-to-W inst. spill.-value	NW-to-W aff. spill.
Model 1 (main effects)					
Work flexibility	.10	−.11	.10	.14	.08
Work permeability	.22	.33**	−.20	−.29*	−.01
Identity similarity-IS	.06	−.09	.04	.00	−.12
Identity similarity-VBA	−.27**	−.11	.10	.14	.27**
Variable R^2	.14	.13	.05	.10	.07
Model 2 (latent interactions)					
W Flex*Polychronicity	−.30	−.22	.00	.08	−.02
W Perm*Polychronicity	−.60	−.51	.31	.27	.20
Id. sim.-IS*Polychronicity	−.40**	−.44*	.22	.24	.11
Id. sim.-VBA*Polychronicity	−.30*	−.30	.11	.11	−.04

Note. Standardized parameter estimates are reported for Model 1 and unstandardized parameter estimates are reported for Model 2. *p* value reported for Model 2 is based on Bonferroni correction *p* <.0125 and *p* < .0025. NW = nonwork, W = work, IS = interaction style, VBA = values, beliefs, and attitudes.
**p < .01 *p < .05

Table 16

Structural Model Results by Work-Nonwork Directionality: High Work/High Nonwork

Psychological Involvement Group (N = 160)

Predictor	Outcome variable				
	W-to-NW conflict-time	W-to-NW conflict-strain	W-to-NW inst. spill.-behavior	W-to-NW inst. spill.-value	W-to-NW aff. spill.
Model 1 (control variables)					
Employment status	.03	.08	--	--	--
Org. tenure	--	.15**	--	--	−.13
Super. respon.	.10	--	--	--	.08
Relative satis.	−.52**	−.35**	.13	−.05	--
Model 1 (main effects)					
Nonwork flexibility	−.13	−.09	−.06	.12	−.08
Nonwork permeability	.25**	.22**	.11	.07	.07
Identity similarity-IS	.01	.02	−.10	−.23*	−.16
Identity similarity-VBA	−.07	−.24**	.35**	.48**	.17
Variable R^2	.54	.40	.13	.21	.06
Model 2 (latent interactions)					
NW Flex*Polychronicity	−.40	−.39	−.11	−.19	−.05
NW Perm*Polychronicity	−.18	−.15	.02	−.29	−.27
Id. sim.-IS*Polychronicity	−.16	.26	−.29	−.26	.18
Id. sim.-VBA*Polychronicity	−.29	.31	−.21	−.18	.02

Predictor	Outcome variable				
	NW-to-W conflict-time	NW-to-W conflict-strain	NW-to-W inst. spill.-behavior	NW-to-W inst. spill.-value	NW-to-W aff. spill.
Model 1 (main effects)					
Work flexibility	.00	−.08	.14	.35*	.12
Work permeability	.38**	.58**	−.41**	−.63**	−.02
Identity similarity-IS	.00	−.02	.05	.06	−.24*
Identity similarity-VBA	−.32**	−.18	.18	.02	.29**
Variable R^2	.24	.31	.16	.27	.09
Model 2 (latent interactions)					
W Flex*Polychronicity	−.34	−.51	.34*	.23	.14
W Perm*Polychronicity	−.57*	−.71*	.47*	.37*	.16
Id. sim.-IS*Polychronicity	−.41*	−.19	.09	.12	.06
Id. sim.-VBA*Polychronicity	−.27	−.22	.16	−.31	−.06

Note. Standardized parameter estimates are reported for Model 1 and unstandardized parameter estimates are reported for Model 2. *p* value reported for Model 2 is based on Bonferroni correction *p* <.0125 and *p* < .0025. NW = nonwork, W = work, IS = interaction style, VBA = values, beliefs, and attitudes.
**p < .01 *p < .05

Table 17

Significance Tests of Differences in Path Coefficients by Involvement Group: Work-to-Nonwork Directionality (With Controls)

Predictor	Unconstrained model χ^2	df	Constrained model 1[a] χ^2	df	Model comparisons[b] $\Delta\chi^2$	Δdf	Constrained model 2[c] χ^2	df	Model comparisons[d] $\Delta\chi^2$	Δdf
Behavioral inv. – HW/HNW										
1. Nonwork flexibility	974.51	734	974.54	735	.03	1	975.60	735	1.09	1
2. Nonwork permeability	974.51	734	974.60	735	.09	1	974.78	735	.27	1
3. Identity similarity – IS	974.51	734	974.92	735	.41	1	974.54	735	.03	1
4. Identity similarity – VBA	974.51	734	976.62	735	2.11	1	987.09	735	12.58[**]	1
Psychological inv. – HW/HNW										
1. Nonwork flexibility	1049.20	734	1049.21	735	.01	1	1053.04	735	3.84[*]	1
2. Nonwork permeability	1049.20	734	1049.59	735	.39	1	1049.23	735	.03	1
3. Identity similarity – IS	1049.20	734	1049.24	735	.04	1	1050.32	735	1.12	1
4. Identity similarity – VBA	1049.20	734	1052.64	735	3.44	1	1058.43	735	9.23[**]	1

Note. HW = high work, HNW = high nonwork, IS = interaction style, VBA = values, beliefs, and attitudes.

[a] Equality constraints for behavior-based instrumental spillover and affective spillover

[b] Unconstrained model compared to model 1

[c] Equality constraints for value-based instrumental spillover and affective spillover

[d] Unconstrained model compared to model 2

[**] $\Delta\chi^2$ $p < .01$ [*] $\Delta\chi^2$ $p < .05$

Table 18

Significance Tests of Differences in Path Coefficients by Involvement Group: Nonwork-to-Work Directionality (No Controls)

Predictor	Unconstrained model χ^2	df	Constrained model 1[a] χ^2	df	Model comparisons[b] $\Delta\chi^2$	Δdf	Constrained model 2[c] χ^2	df	Model comparisons[d] $\Delta\chi^2$	Δdf
Behavioral inv. – HW/HNW										
1. Work flexibility	834.36	564	834.36	565	.00	1	834.64	565	.28	1
2. Work permeability	834.36	564	836.67	565	2.31	1	840.31	565	5.95[*]	1
3. Identity similarity – IS	834.36	564	836.91	565	2.55	1	835.66	565	1.30	1
4. Identity similarity – VBA	834.36	564	838.31	565	3.95[*]	1	835.93	565	1.57	1
Psychological inv. – HW/HNW										
1. Work flexibility	871.09	564	871.11	565	.02	1	872.99	565	1.90	1
2. Work permeability	871.09	564	875.55	565	4.46[*]	1	885.34	565	14.25[**]	1
3. Identity similarity – IS	871.09	564	877.36	565	6.27[*]	1	877.38	565	6.29[*]	1
4. Identity similarity – VBA	871.09	564	872.90	565	1.81	1	876.32	565	5.23[*]	1

Note. HW = high work, HNW = high nonwork, IS = interaction style, VBA = values, beliefs, and attitudes.

[a] Equality constraints for behavior-based instrumental spillover and affective spillover

[b] Unconstrained model compared to model 1

[c] Equality constraints for value-based instrumental spillover and affective spillover

[d] Unconstrained model compared to model 2

[**] $\Delta\chi^2$ $p < .01$ [*] $\Delta\chi^2$ $p < .05$

Table 19

Structural Model Results by Work-Nonwork Directionality: High Work/Low Nonwork

Behavioral Involvement Group (N = 184)

	Outcome variable				
Predictor	W-to-NW conflict-time	W-to-NW conflict-strain	W-to-NW inst. spill.-behavior	W-to-NW inst. spill.-value	W-to-NW aff. spill.
Model 1 (control variables)					
Employment status	−.01	.02	--	--	--
Org. tenure	--	.14**	--	--	.06
Super. respon.	.06	--	--	--	.04
Relative satis.	−.44**	−.37**	.04	.14	--
Model 1 (main effects)					
Nonwork flexibility	−.14*	−.16*	−.06	−.05	−.10
Nonwork permeability	.25**	.23**	.06	.11	.02
Identity similarity-IS	−.09	−.01	−.02	−.04	−.12
Identity similarity-VBA	−.11	−.18*	.37**	.49**	.26**
Variable R^2	.47	.41	.13	.26	.07
Model 2 (latent interactions)					
NW Flex*Polychronicity	.03	−.43	.41	.31	.19
NW Perm*Polychronicity	.05	.20	−.19	−.37	.13
Id. sim.-IS*Polychronicity	.07	.21	−.14	−.29	−.03
Id. sim.-VBA*Polychronicity	.06	.14	.11	.04	−.04

	Outcome variable				
Predictor	NW-to-W conflict-time	NW-to-W conflict-strain	NW-to-W inst. spill.-behavior	NW-to-W inst. spill.-value	NW-to-W aff. spill.
Model 1 (main effects)					
Work flexibility	.19	.07	−.06	.05	.15
Work permeability	.07	.18	.12	.00	−.04
Identity similarity-IS	−.24*	−.13	.14	.20*	.00
Identity similarity-VBA	−.07	−.15	.16	.06	.37**
Variable R^2	.11	.10	.07	.05	.17
Model 2 (latent interactions)					
W Flex*Polychronicity	−.14	−.21	−.17	−.22	.12
W Perm*Polychronicity	−.41	−1.11	.19	.88	.29
Id. sim.-IS*Polychronicity	−.33	.03	−.27	−.27	−.28
Id. sim.-VBA*Polychronicity	−.04	.15	−.03	−.22	−.03

Note. Standardized parameter estimates are reported for Model 1 and unstandardized parameter estimates are reported for Model 2. *p* value reported for Model 2 is based on Bonferroni correction $p < .0125$ and $p < .0025$. NW = nonwork, W = work, IS = interaction style, VBA = values, beliefs, and attitudes.
** $p < .01$ * $p < .05$

Table 20

Structural Model Results by Work-Nonwork Directionality: High Work/Low Nonwork

Psychological Involvement Group (N = 105)

Predictor	Outcome variable				
	W-to-NW conflict-time	W-to-NW conflict-strain	W-to-NW inst. spill.-behavior	W-to-NW inst. spill.-value	W-to-NW aff. spill.
Model 1 (control variables)					
Employment status	−.03	.13	--	--	--
Org. tenure	--	.02	--	--	.02
Super. respon.	.02	--	--	--	.08
Relative satis.	−.29**	−.25**	.04	.15	--
Model 1 (main effects)					
Nonwork flexibility	−.10	.01	−.03	−.07	.02
Nonwork permeability	.23**	.02	.00	.01	−.19
Identity similarity-IS	−.16	−.20	−.02	−.03	−.12
Identity similarity-VBA	−.28**	−.33**	.34**	.35**	.09
Variable R^2	.38	.33	.12	.15	.05
Model 2 (latent interactions)					
NW Flex*Polychronicity	.18	−.12	.06	−.33	−.04
NW Perm*Polychronicity	−.20	−.15	.17	.15	.32
Id. sim.-IS*Polychronicity	−.16	−.04	−.02	−.12	−.06
Id. sim.-VBA*Polychronicity	.30	−.04	−.17	−.40*	−.22

Predictor	Outcome variable				
	NW-to-W conflict-time	NW-to-W conflict-strain	NW-to-W inst. spill.-behavior	NW-to-W inst. spill.-value	NW-to-W aff. spill.
Model 1 (main effects)					
Work flexibility	.22	.08	.12	.00	.18
Work permeability	.06	.03	.21	.19	−.08
Identity similarity-IS	.04	−.19	.24*	.10	−.01
Identity similarity-VBA	−.34*	−.09	.04	.08	.26*
Variable R^2	.15	.06	.15	.06	.10
Model 2 (latent interactions)					
W Flex*Polychronicity	−.36	−.13	−.28	.12	−.13
W Perm*Polychronicity	−.51	−.45	−.42	.12	−.05
Id. sim.-IS*Polychronicity	.05	−.16	.09	.14	.18
Id. sim.-VBA*Polychronicity	.08	−.15	.15	.13	.12

Note. Standardized parameter estimates are reported for Model 1 and unstandardized parameter estimates are reported for Model 2. *p* value reported for Model 2 is based on Bonferroni correction *p* <.0125 and *p* < .0025. NW = nonwork, W = work, IS = interaction style, VBA = values, beliefs, and attitudes.
**p < .01 *p < .05

Table 21

Structural Model Results by Work-Nonwork Directionality: Low Work/High Nonwork

Psychological Involvement Group (N = 112)

Predictor	W-to-NW conflict-time	W-to-NW conflict-strain	W-to-NW inst. spill.-behavior	W-to-NW inst. spill.-value	W-to-NW aff. spill.
			Outcome variable		
Model 1 (control variables)					
Employment status	.03	−.04	--	--	--
Org. tenure	--	.15*	--	--	.10
Super. respon.	−.02	--	--	--	.12
Relative satis.	−.34**	−.26**	.07	.17	--
Model 1 (main effects)					
Nonwork flexibility	−.20*	−.19*	.02	−.04	−.03
Nonwork permeability	.31**	.35**	−.14	−.05	−.16
Identity similarity-IS	−.18*	−.12	.03	−.02	−.21
Identity similarity-VBA	−.17	−.25**	.21	.46**	.21
Variable R^2	.54	.56	.11	.32	.11
Model 2 (latent interactions)					
NW Flex*Polychronicity	.17	−.11	.19	.16	.34
NW Perm*Polychronicity	.49	.29	.69	.62	.50
Id. sim.-IS*Polychronicity	−.34	−.29	−.40	−.34	−.08
Id. sim.-VBA*Polychronicity	−.06	−.06	−.25	−.16	.18

Predictor	NW-to-W conflict-time	NW-to-W conflict-strain	NW-to-W inst. spill.-behavior	NW-to-W inst. spill.-value	NW-to-W aff. spill.
			Outcome variable		
Model 1 (main effects)					
Work flexibility	.12	−.19	−.11	.04	.00
Work permeability	.14	.22	.08	.01	.22
Identity similarity-IS	−.28*	−.26*	−.01	.13	.08
Identity similarity-VBA	.13	−.02	.09	.13	.39**
Variable R^2	.14	.12	.01	.05	.20
Model 2 (latent interactions)					
W Flex*Polychronicity	.00	−.01	−.66	−.73	−.02
W Perm*Polychronicity	1.20	.46	.59	.14	1.43
Id. sim.-IS*Polychronicity	−.60*	−.44	−.24	−.08	−.21
Id. sim.-VBA*Polychronicity	−.09	−.09	−.26	−.49	.02

Note. Standardized parameter estimates are reported for Model 1 and unstandardized parameter estimates are reported for Model 2. *p* value reported for Model 2 is based on Bonferroni correction *p* <.0125 and *p* < .0025. NW = nonwork, W = work, IS = interaction style, VBA = values, beliefs, and attitudes.
$^{**}p$ < .01 $^*p$ < .05

FIGURE 1

Illustrative Example of Work and Nonwork Role Domains

Work Role Domain

Nonwork Role Domain

Community
Role

Leisure
Role

Family
Role
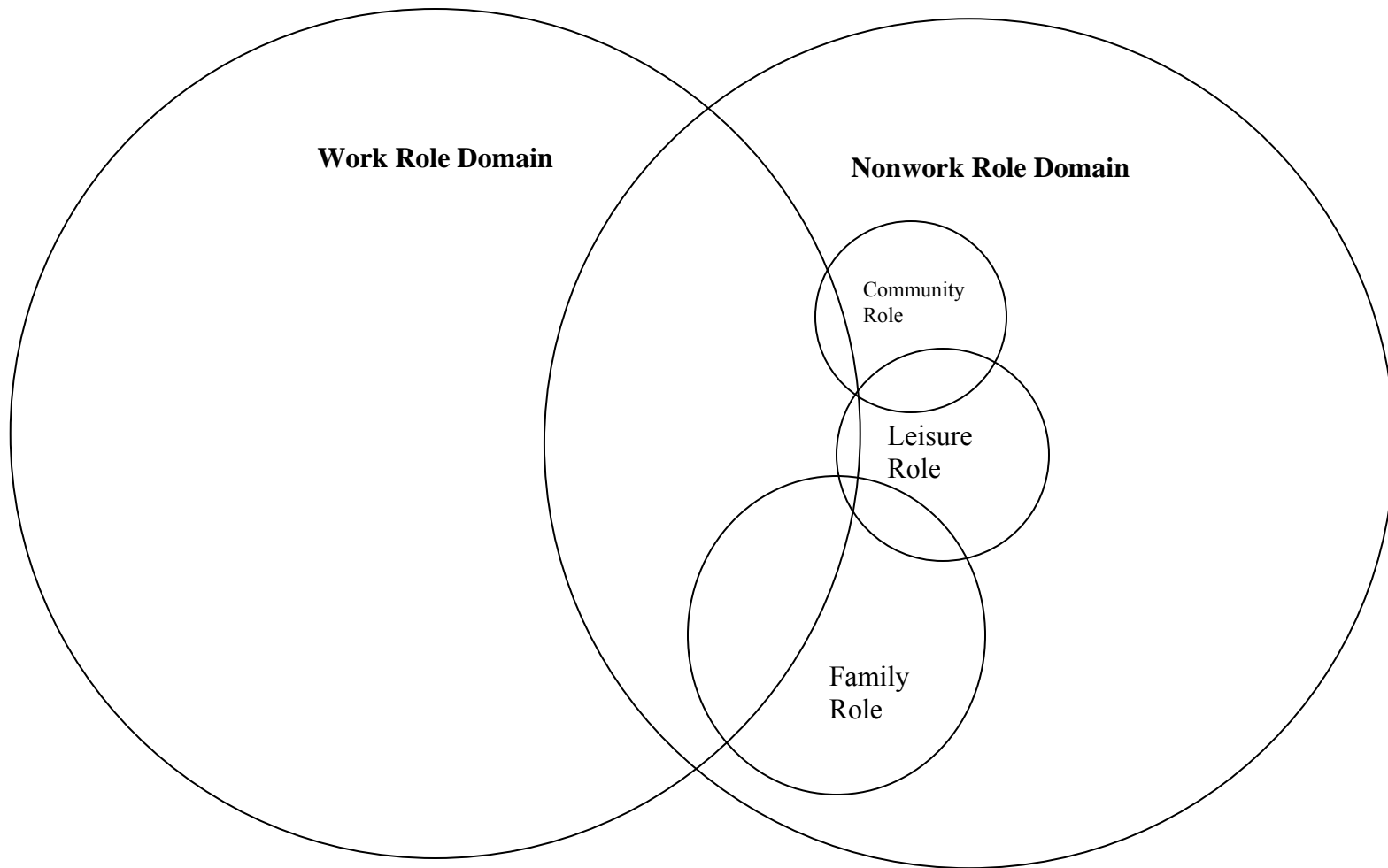
FIGURE 2

Theoretical Model of Role Integration and Role Polychronicity Influences on Work-Nonwork Conflict and Positive Spillover
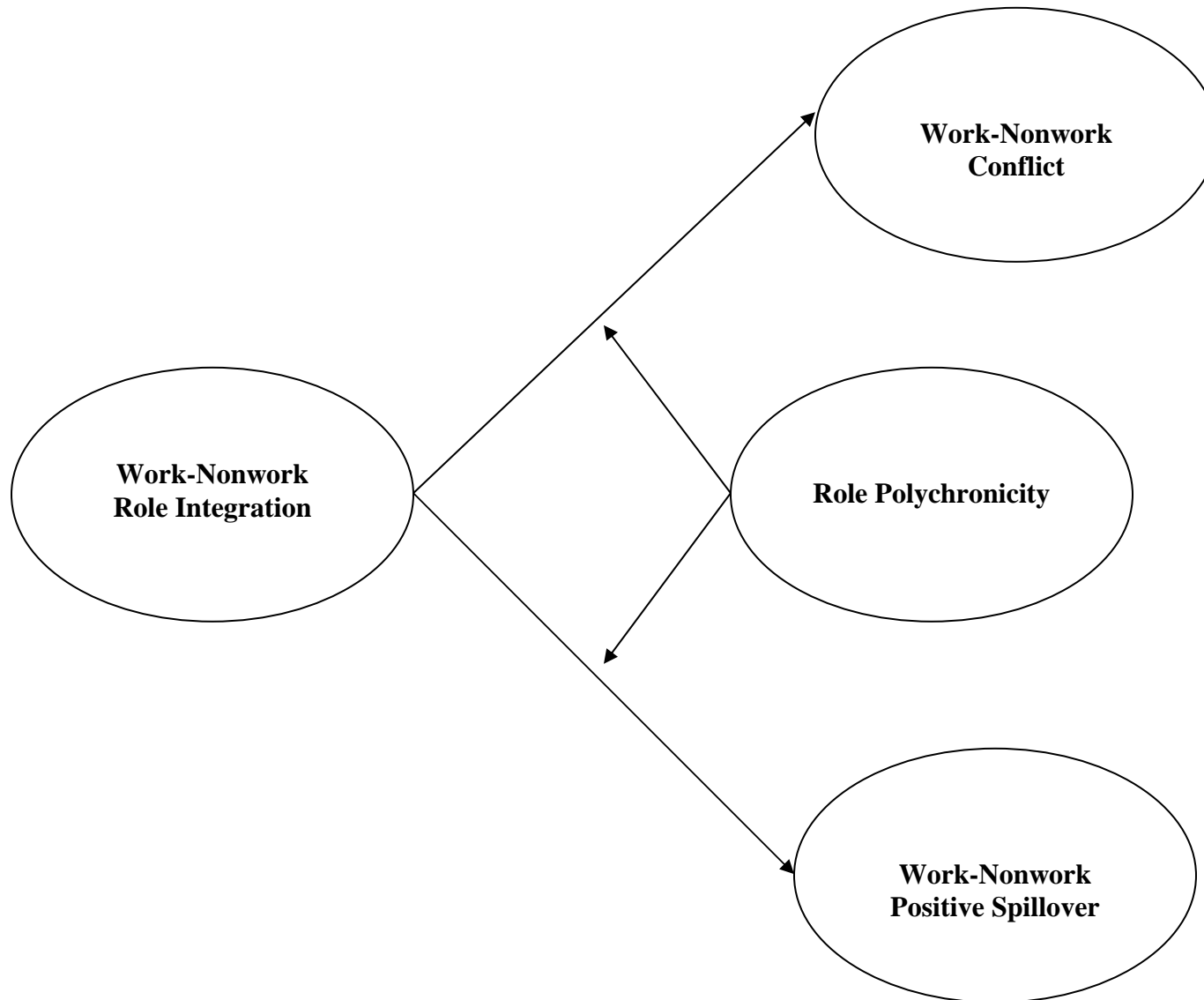
FIGURE 3

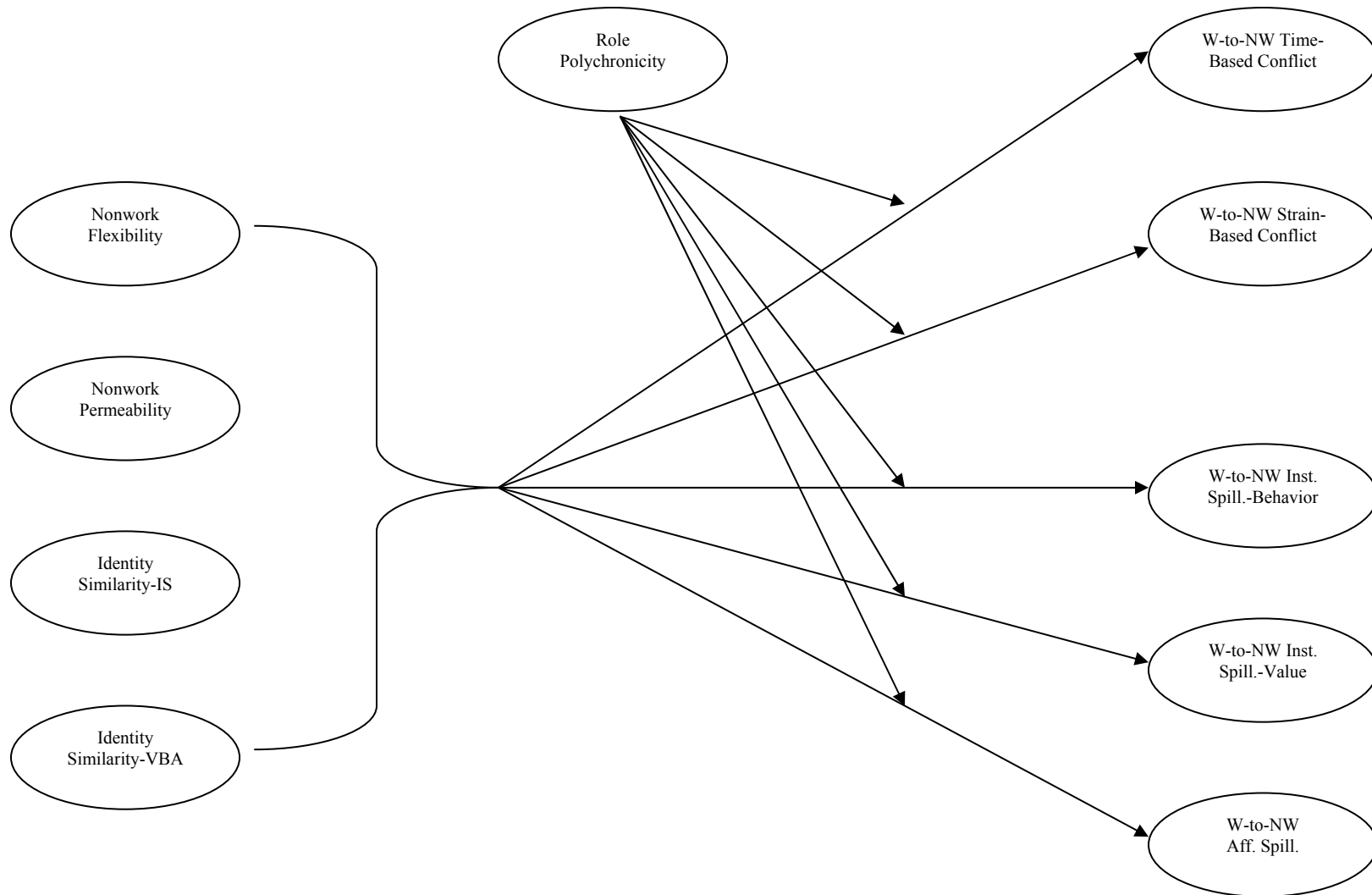Structural Model for Work-to-Nonwork Directionality

FIGURE 4

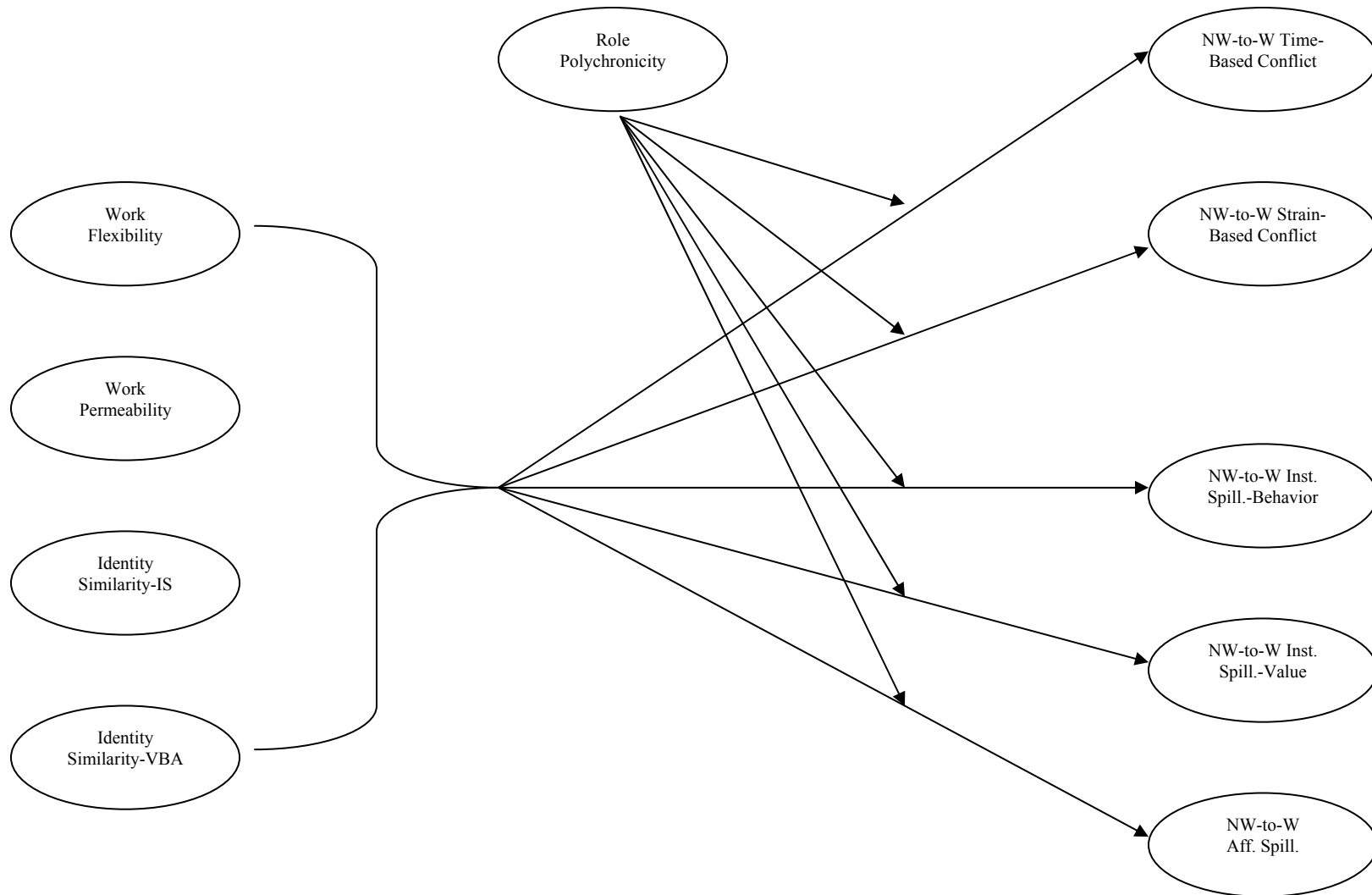## Structural Model for Nonwork-to-Work Directionality

FIGURE 5

Interaction Plot of Identity Similarity-IS by Role Polychronicity (Outcome = Nonwork-to-Work

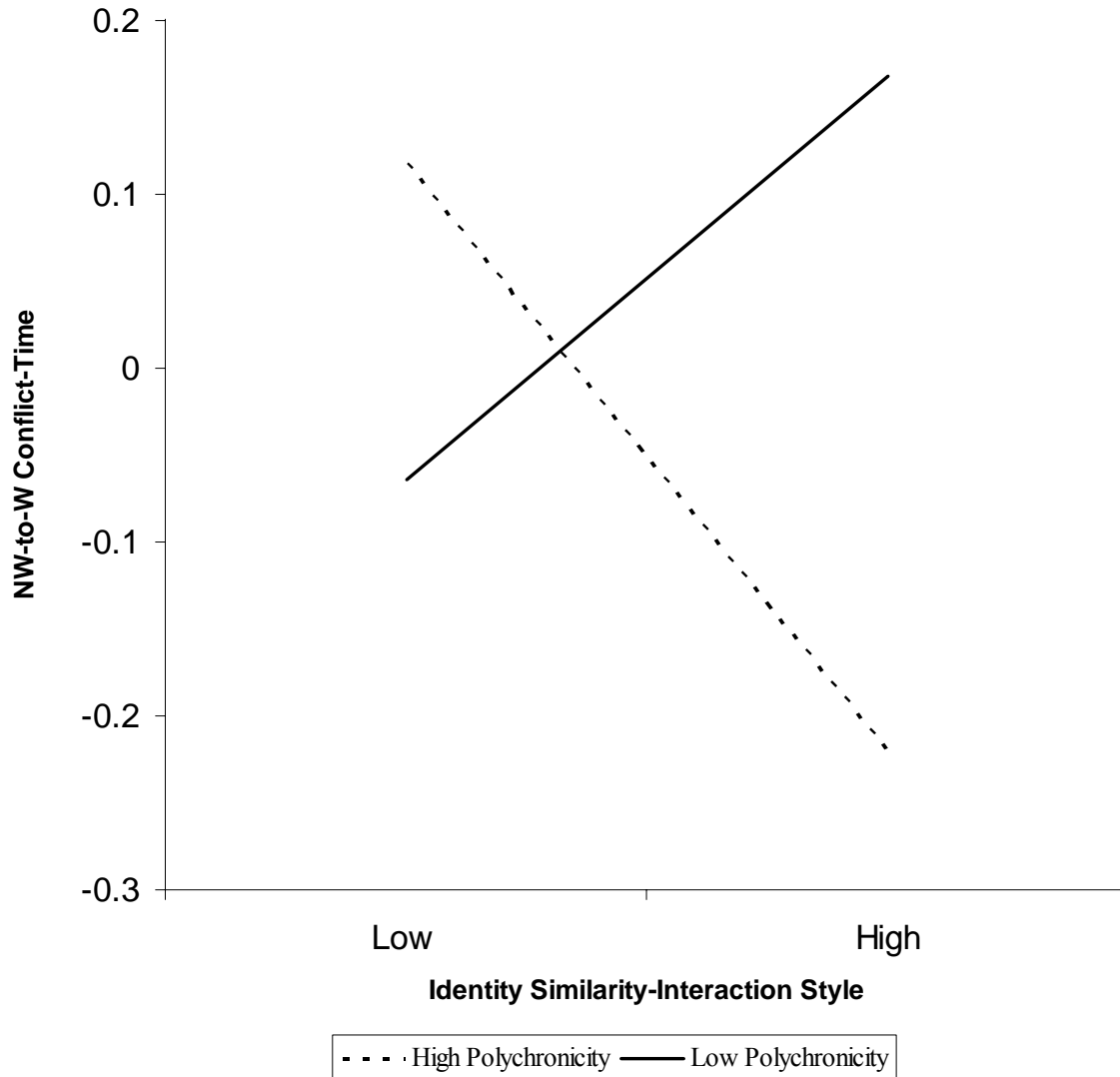Conflict-Time): High Work/High Nonwork Behavioral Involvement Group
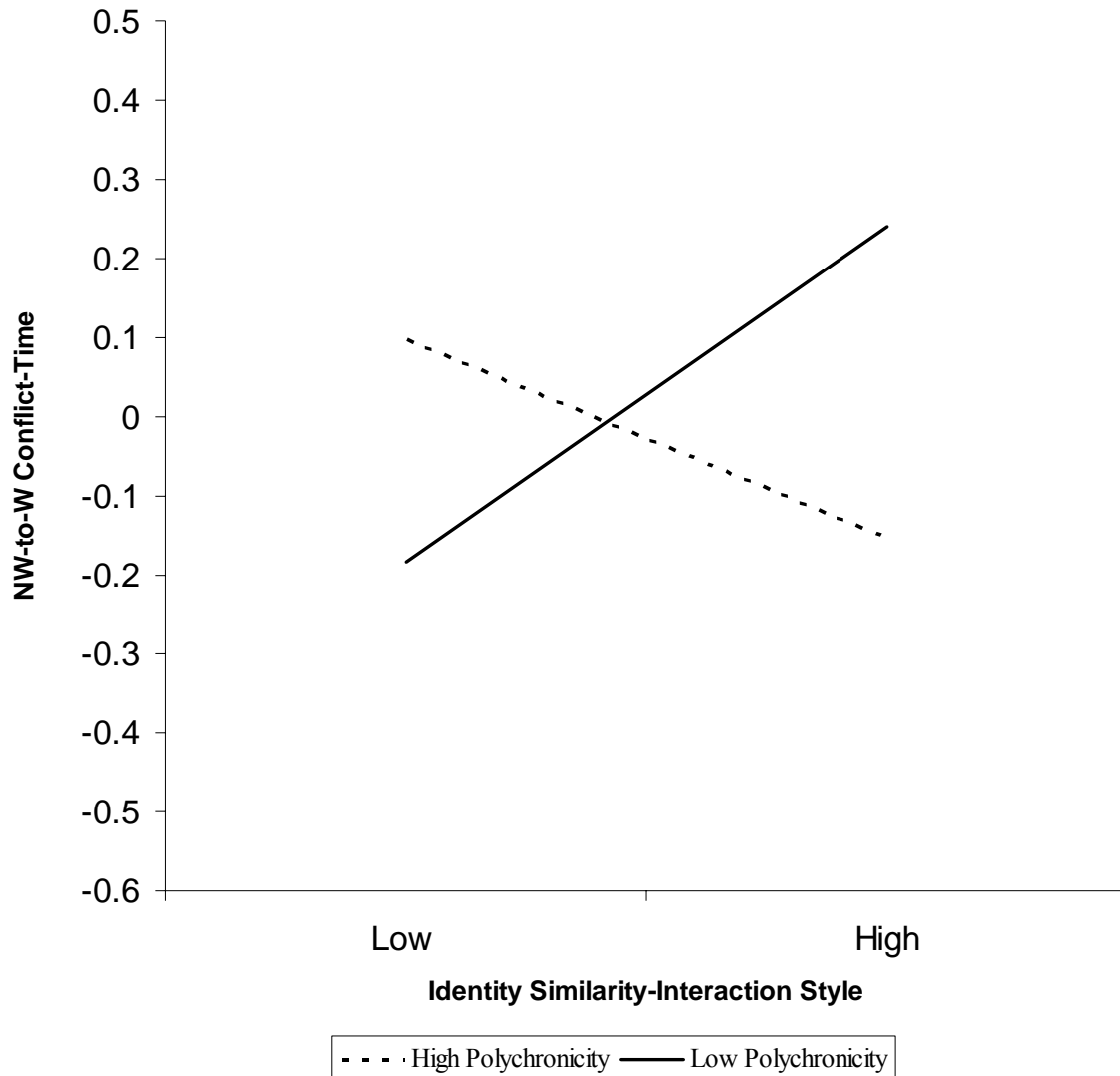
FIGURE 6

Interaction Plot of Identity Similarity-IS by Role Polychronicity (Outcome = Nonwork-to-Work

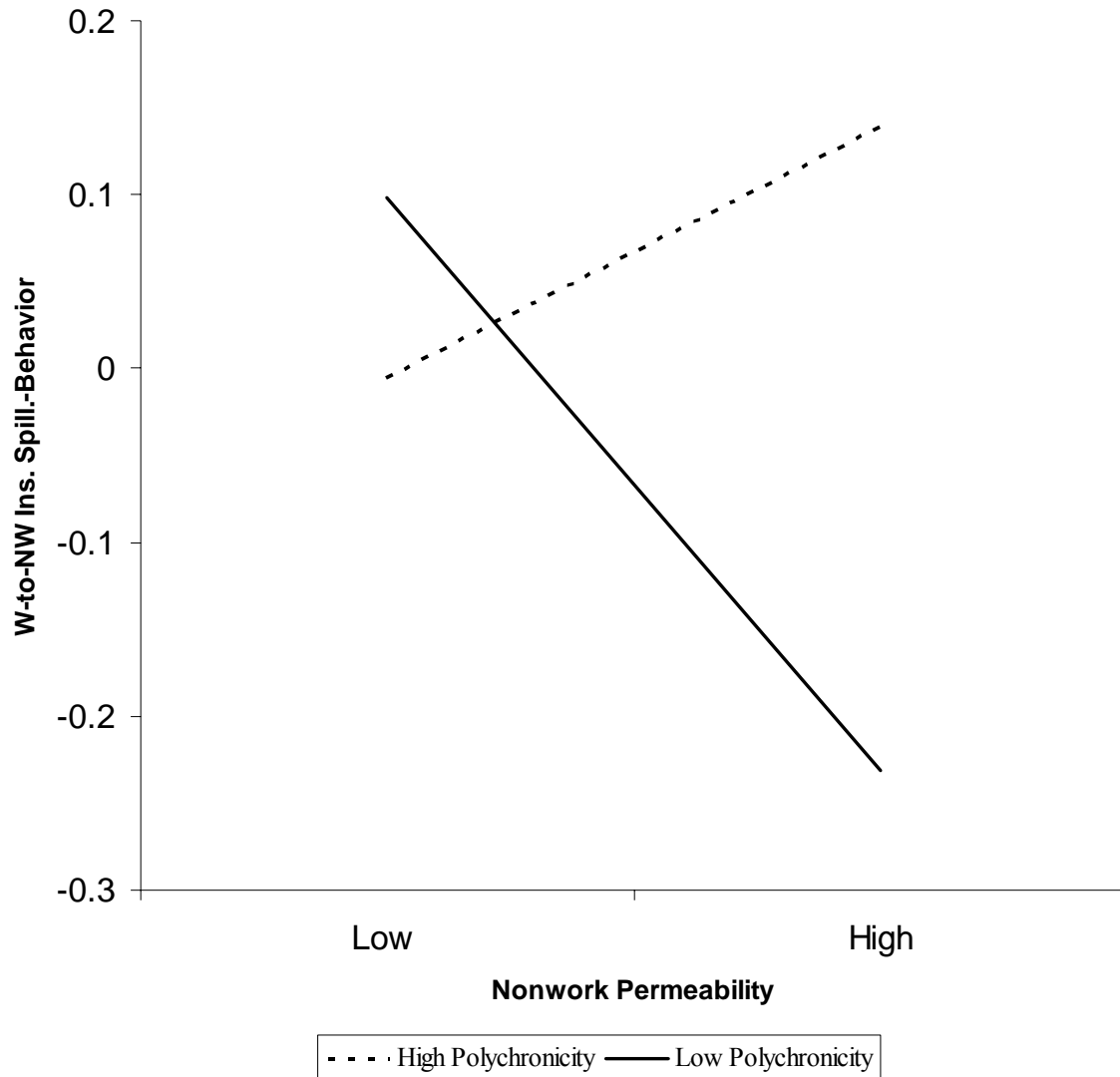Conflict-Strain): High Work/High Nonwork Behavioral Involvement Group
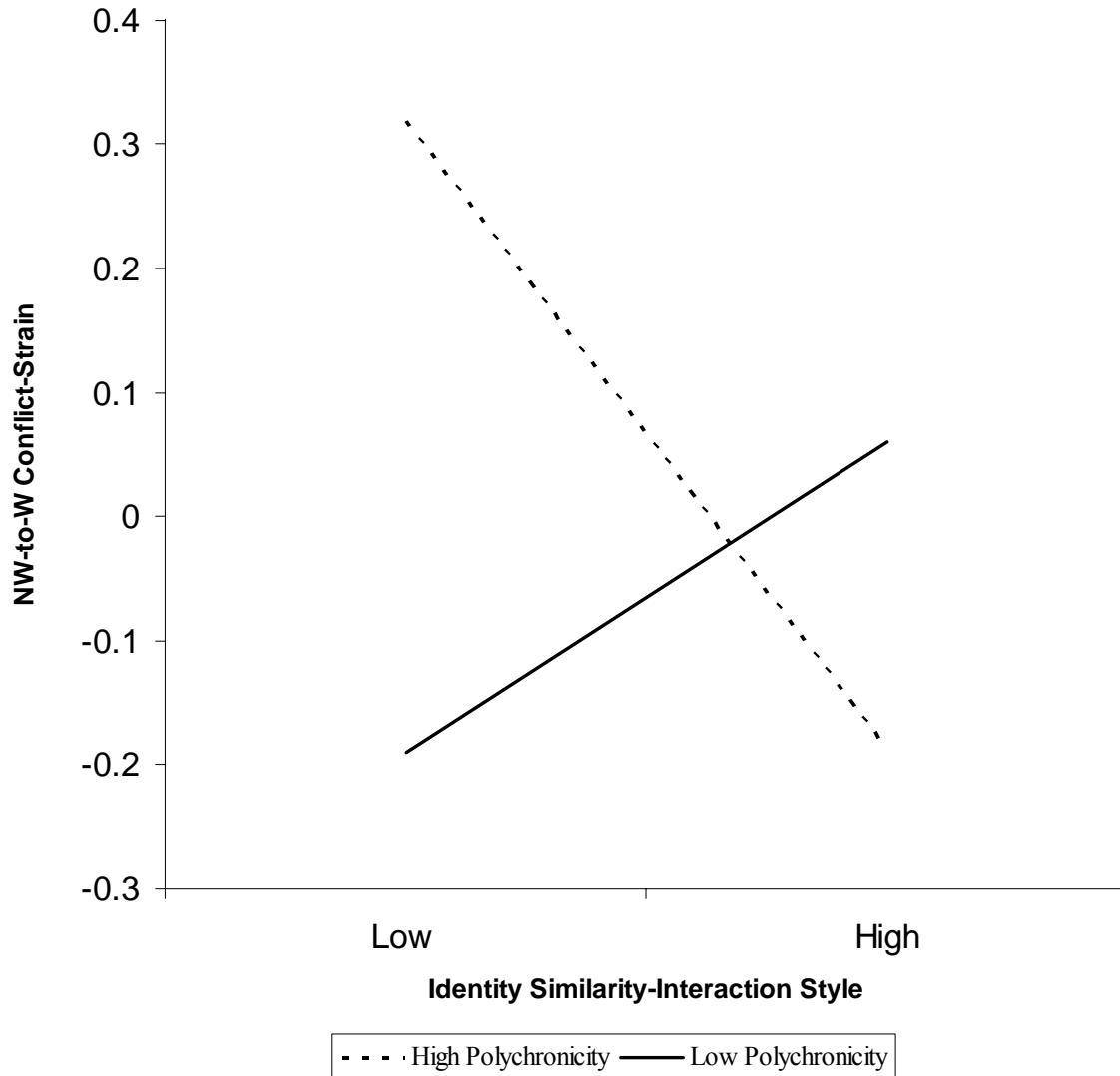
FIGURE 7

Interaction Plot of Identity Similarity-VBA by Role Polychronicity (Outcome = Nonwork-to-Work Conflict-Time): High Work/High Nonwork Behavioral Involvement Group
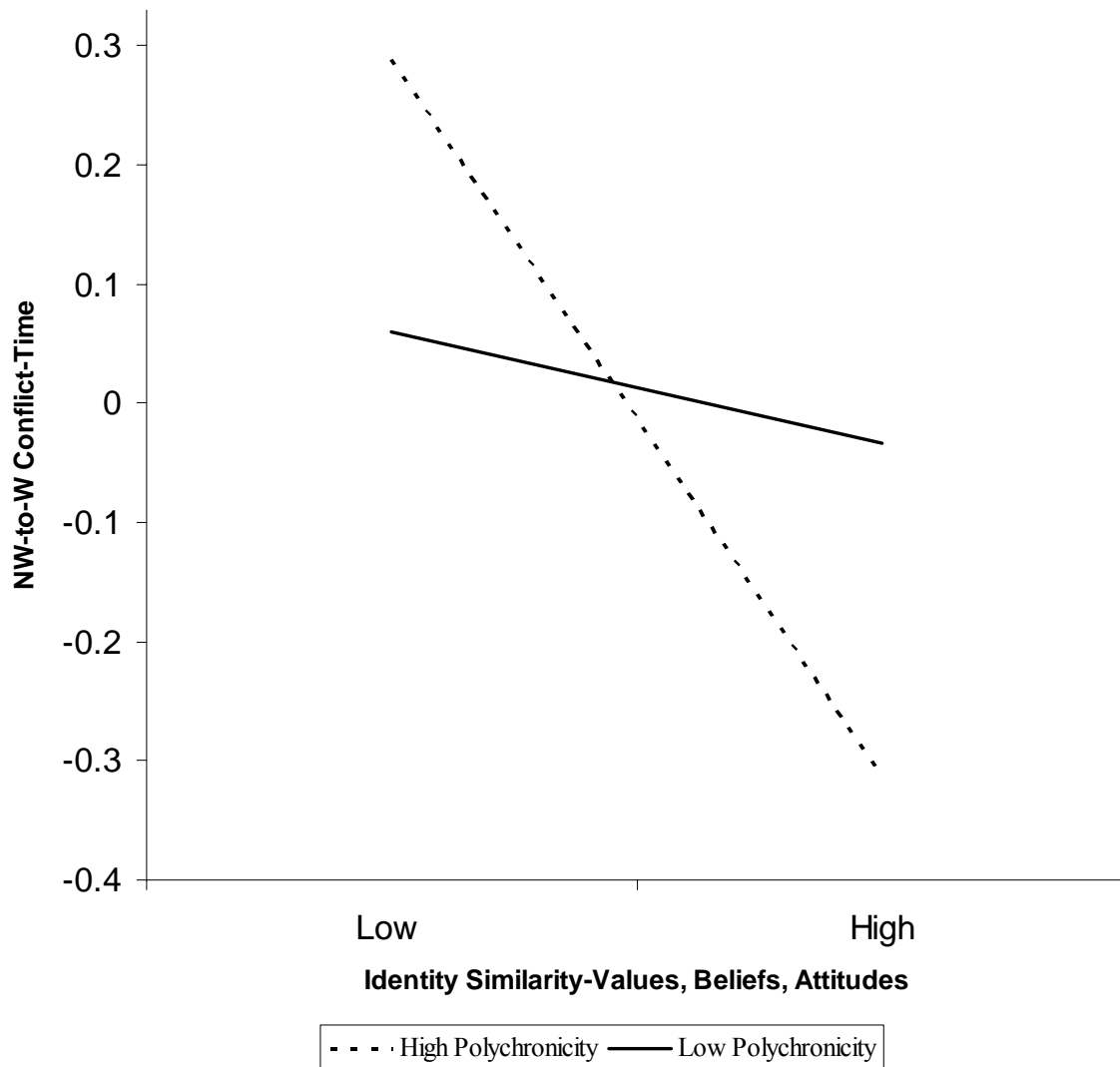
FIGURE 8

Interaction Plot of Work Permeability by Role Polychronicity (Outcome = Nonwork-to-Work

Conflict-Time): High Work/High Nonwork Psychological Involvement Group
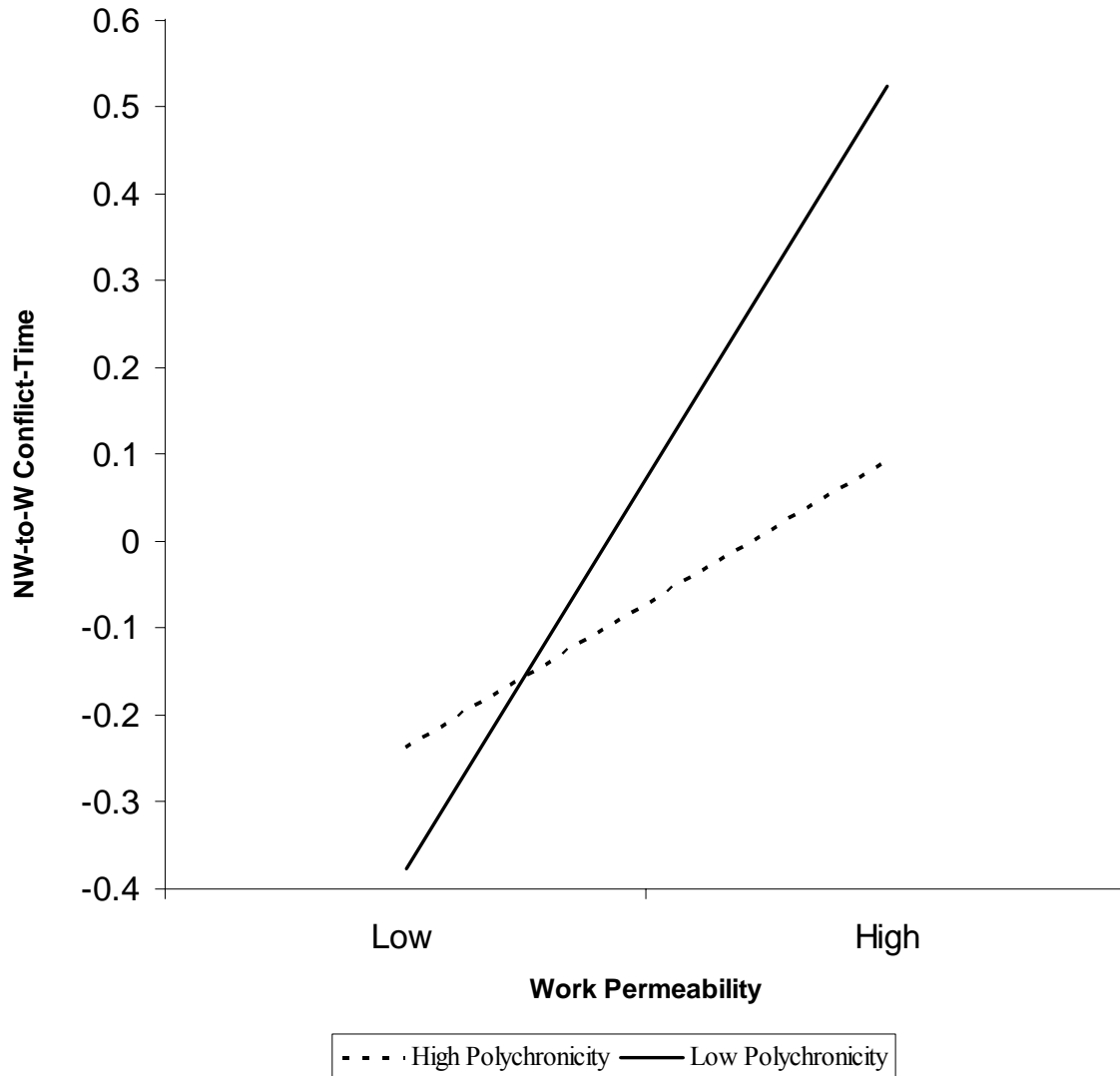
FIGURE 9

Interaction Plot of Work Permeability by Role Polychronicity (Outcome = Nonwork-to-Work

Conflict-Strain): High Work/High Nonwork Psychological Involvement Group
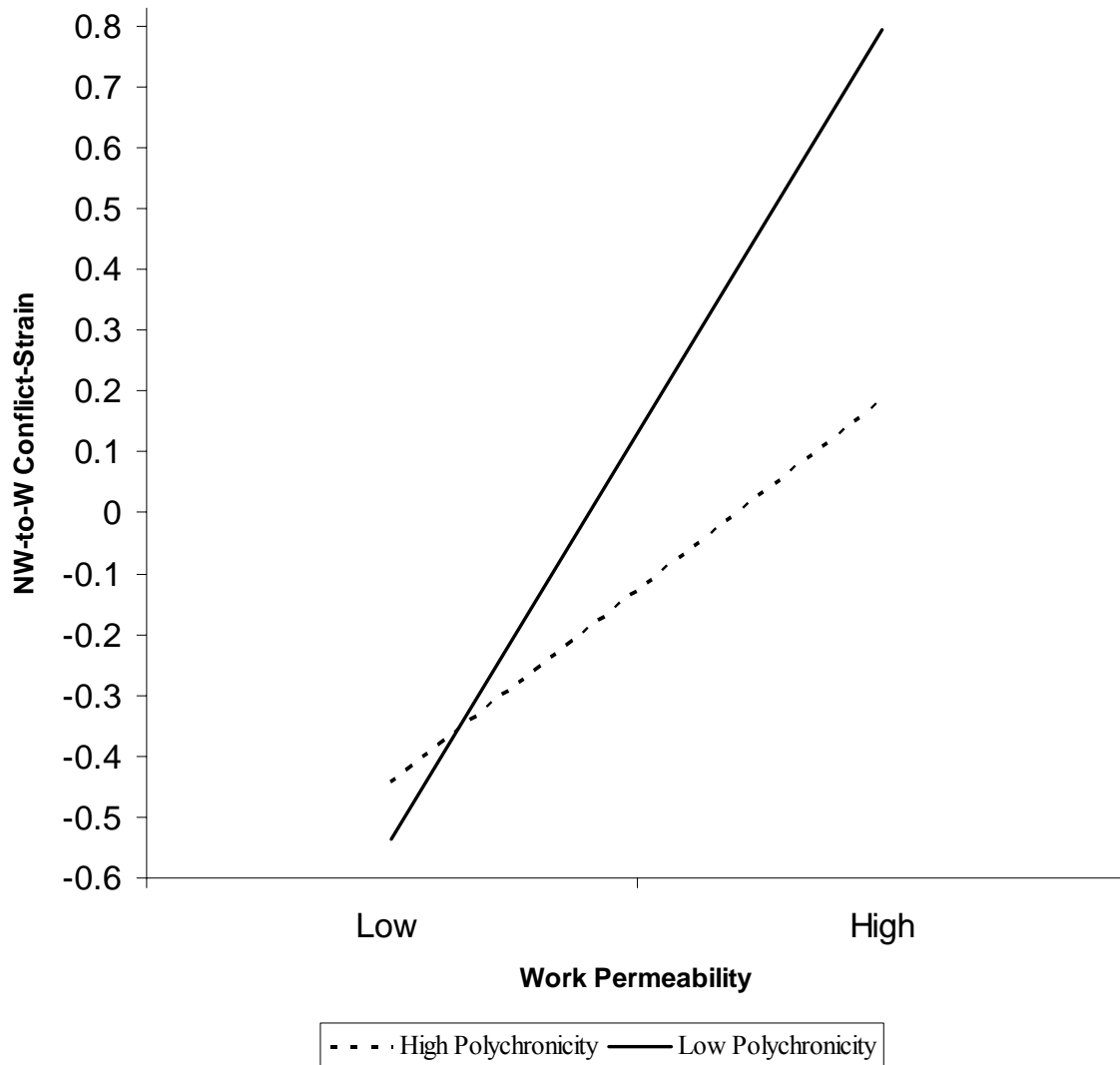
FIGURE 10

Interaction Plot of Identity Similarity-IS by Role Polychronicity (Outcome = Nonwork-to-Work

Conflict-Time): High Work/High Nonwork Psychological Involvement Group

FIGURE 11

Interaction Plot of Nonwork Flexibility by Role Polychronicity (Outcome = Work-to-Nonwork

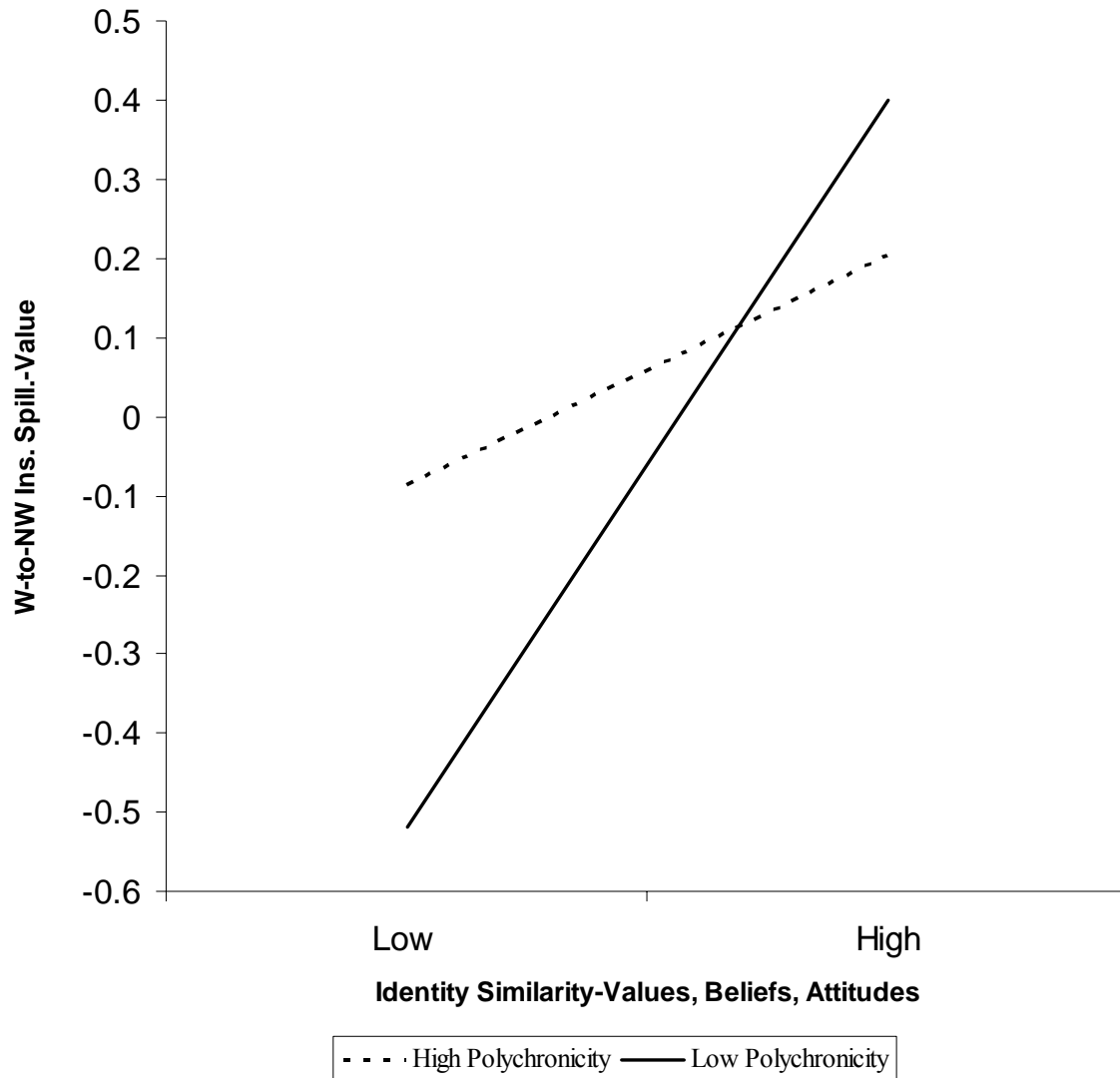Ins. Spillover-Value): High Work/High Nonwork Behavioral Involvement Group
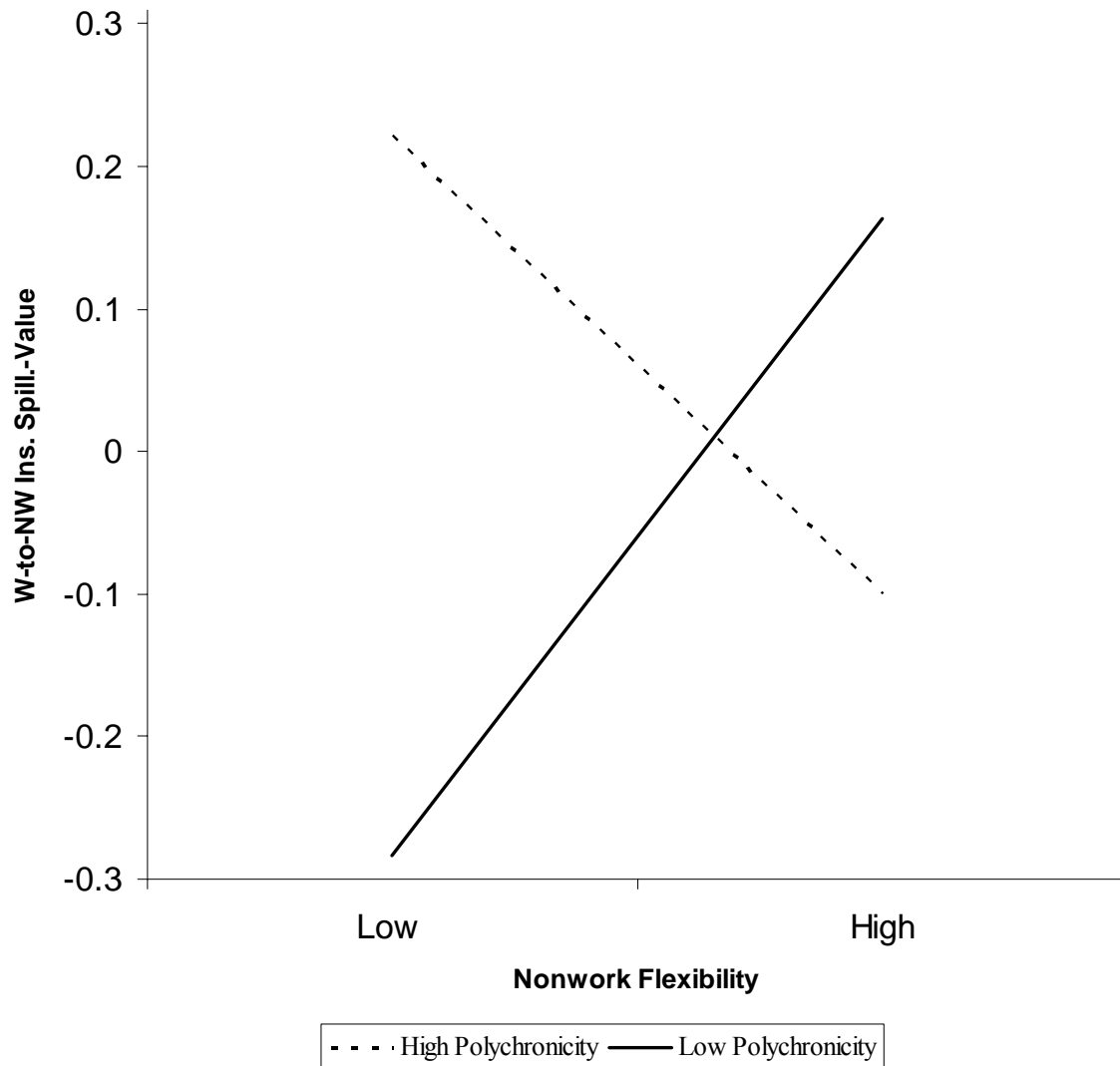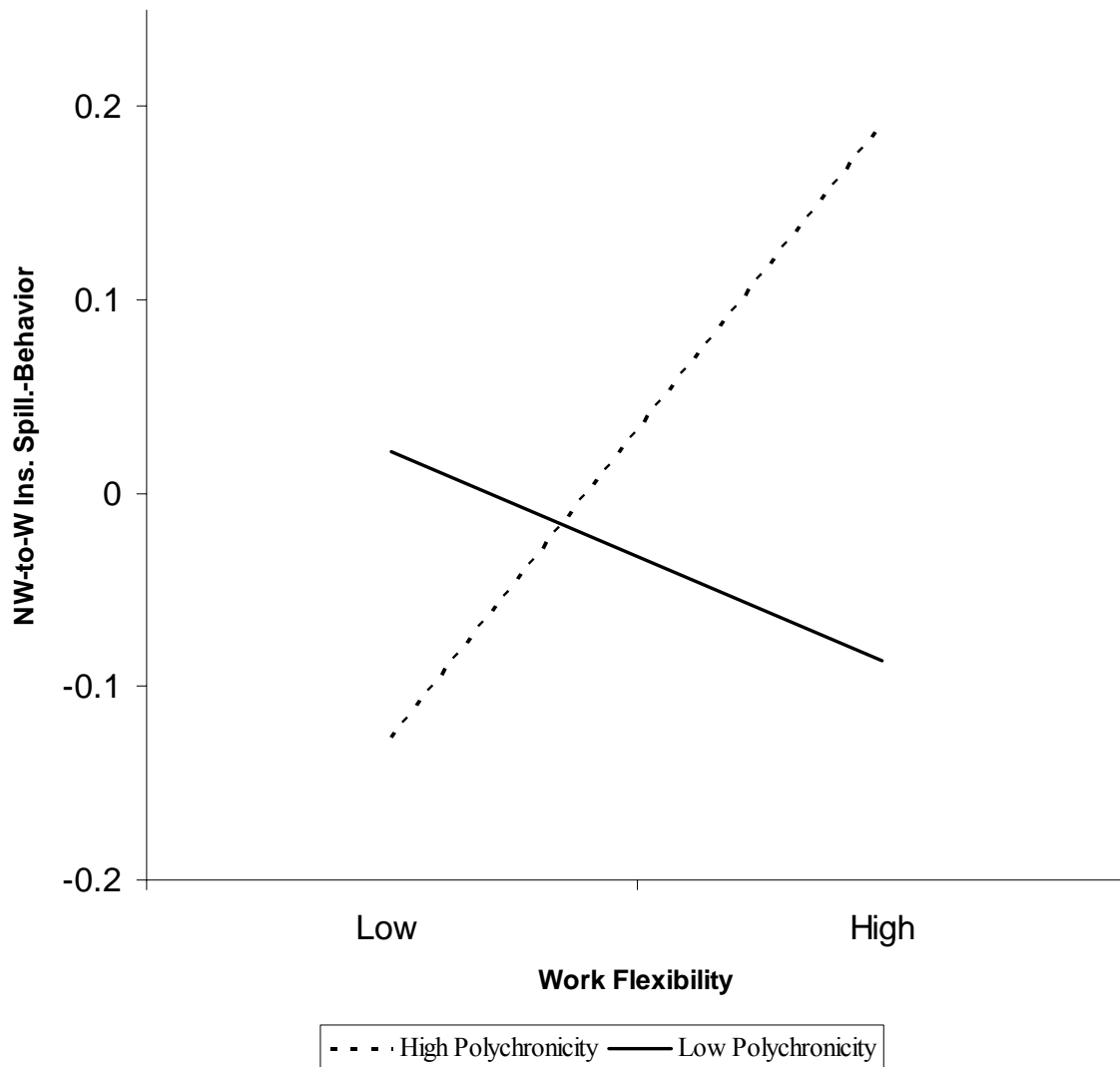
FIGURE 12

Interaction Plot of Nonwork Permeability by Role Polychronicity (Outcome = Work-to-Nonwork Ins. Spillover-Behavior): High Work/High Nonwork Behavioral Involvement Group

FIGURE 13

Interaction Plot of Identity Similarity-VBA by Role Polychronicity (Outcome = Work-to-

Nonwork Ins. Spillover-Value): High Work/High Nonwork Behavioral Involvement Group

FIGURE 14

Interaction Plot of Work Flexibility by Role Polychronicity (Outcome = Nonwork-to-Work Ins.

Spillover-Behavior): High Work/High Nonwork Psychological Involvement Group

FIGURE 15

Interaction Plot of Work Permeability by Role Polychronicity (Outcome = Nonwork-to-Work

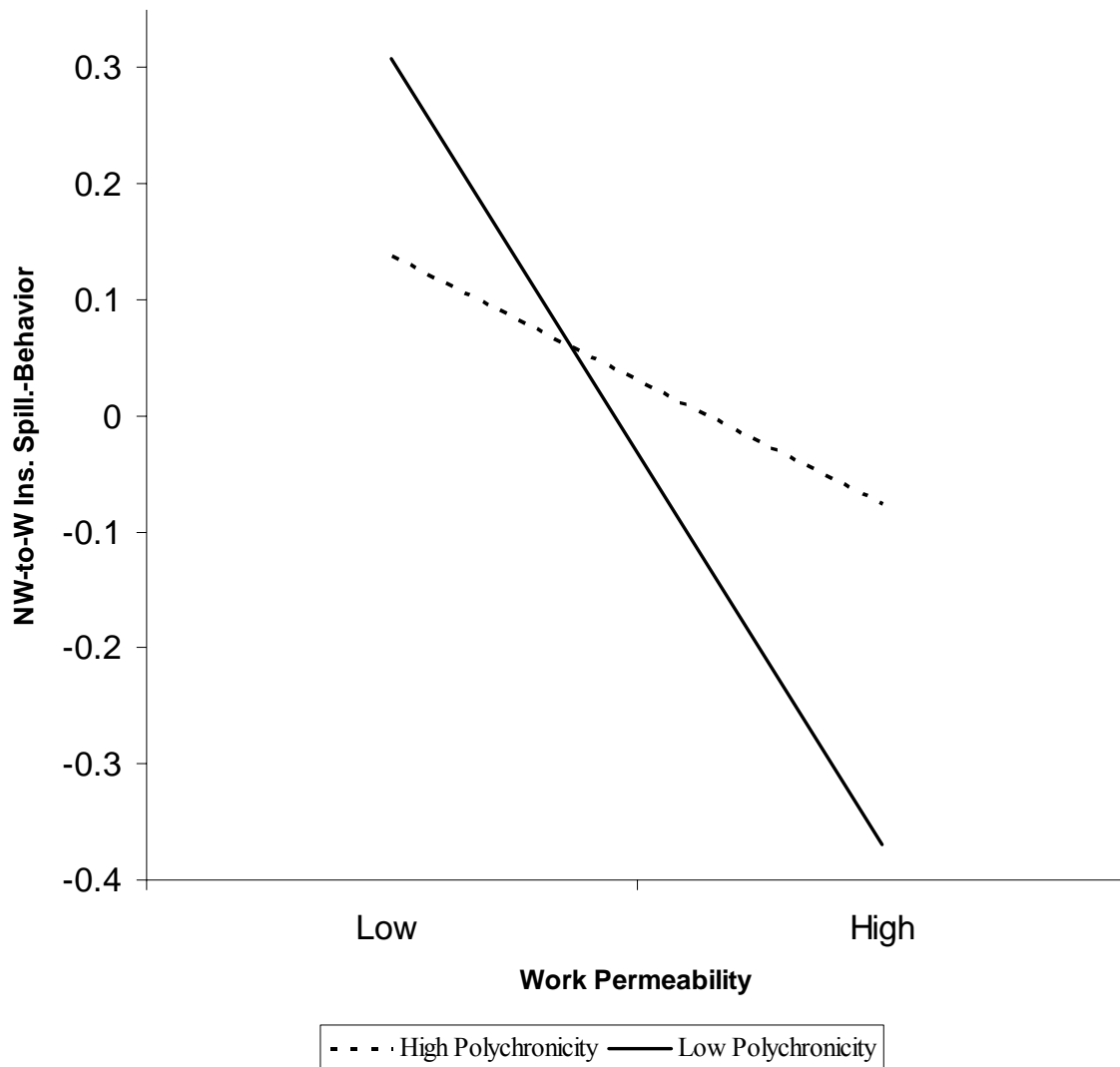Ins. Spillover-Behavior): High Work/High Nonwork Psychological Involvement Group

FIGURE 16

Interaction Plot of Work Permeability by Role Polychronicity (Outcome = Nonwork-to-Work

Ins. Spillover-Value): High Work/High Nonwork Psychological Involvement Group
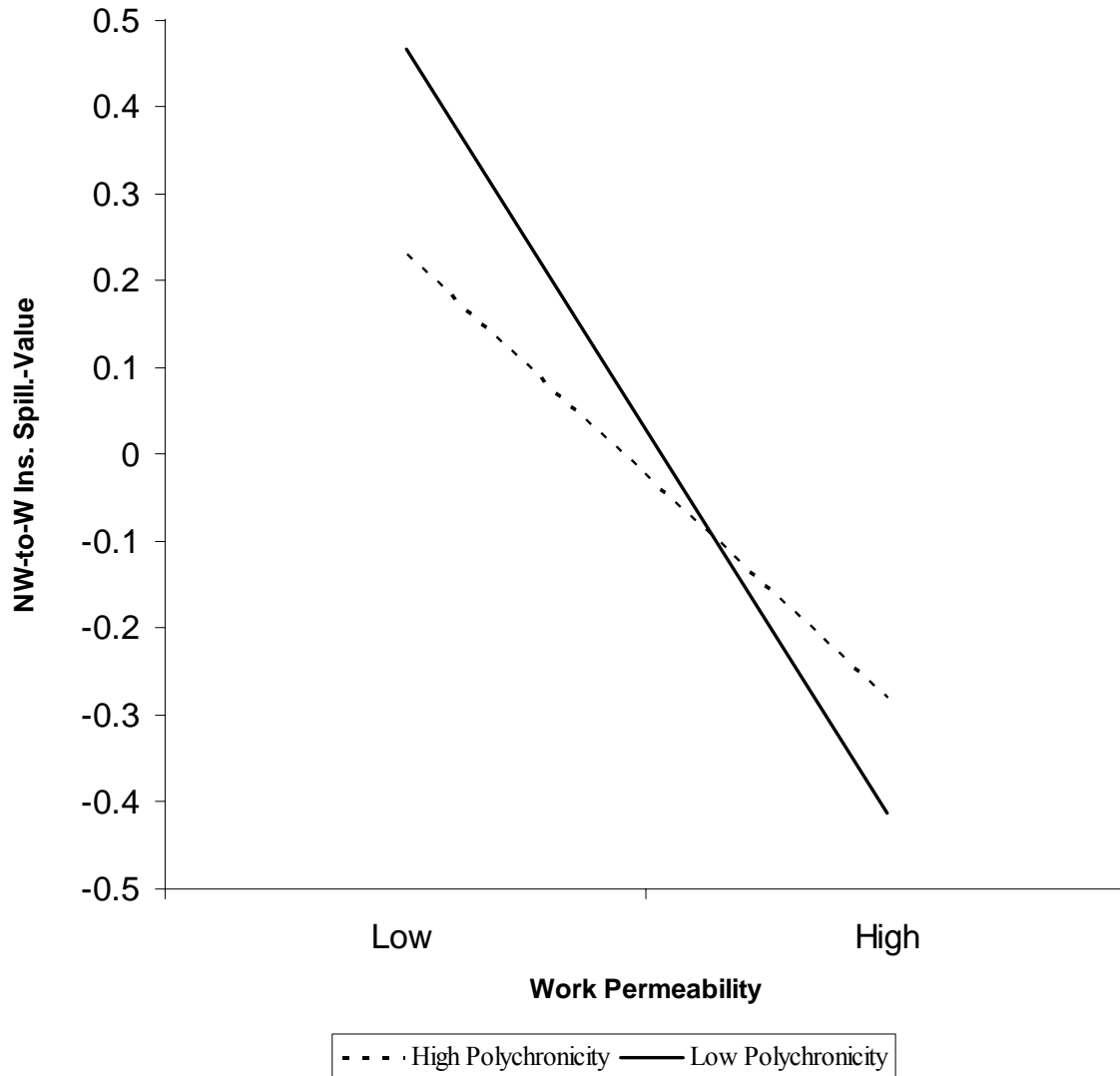
FIGURE 17

Interaction plot of Identity Similarity-VBA by Role Polychronicity (Outcome = Work-to-Nonwork Ins. Spillover-Value): High Work/Low Nonwork Psychological Involvement Group
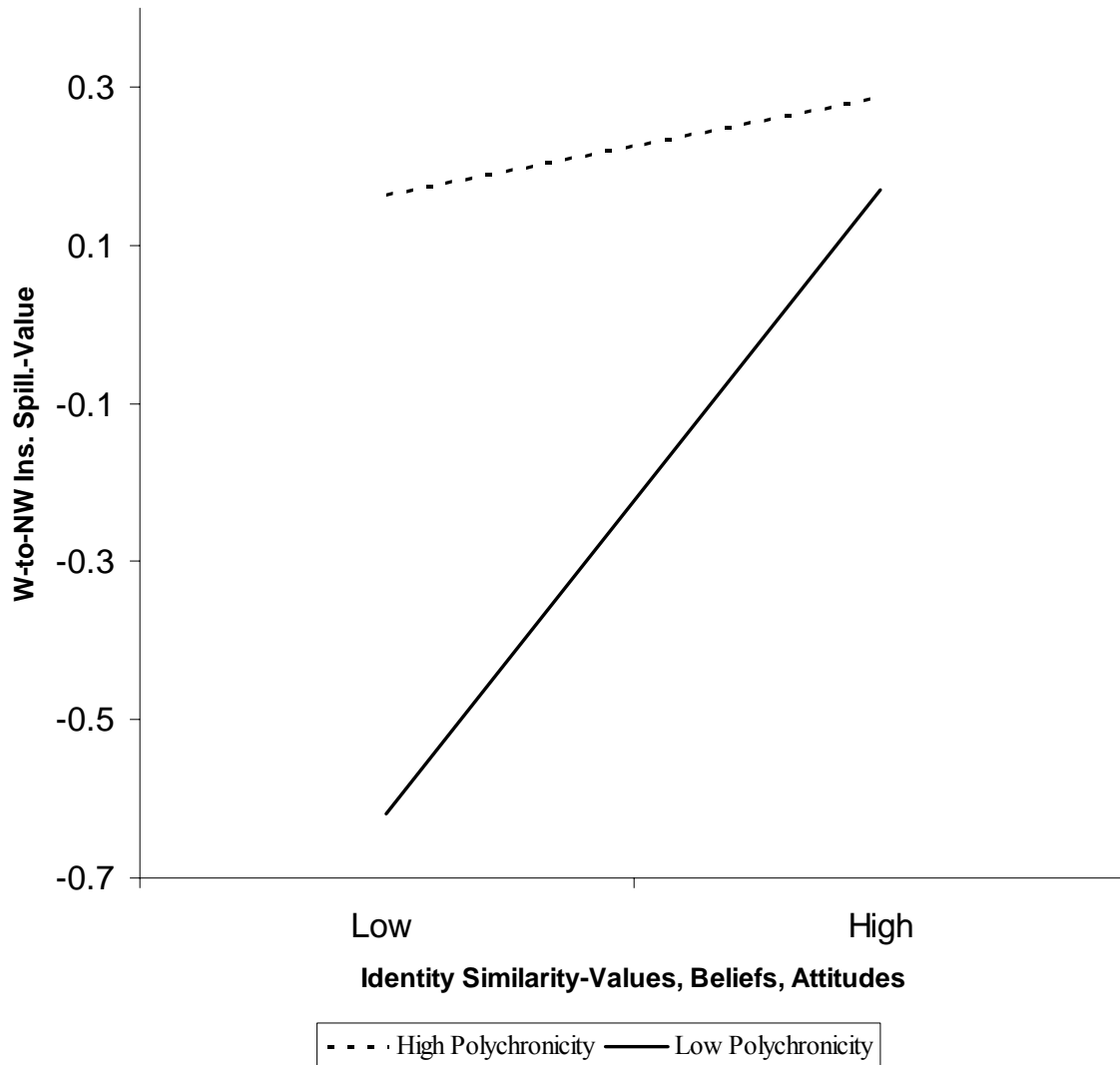
FIGURE 18

Interaction plot of Identity Similarity-IS by Role Polychronicity (Outcome = Nonwork-to-Work

Conflict-Time): Low Work/High Nonwork Psychological Involvement Group