Gender, Polychronicity, and the Work-Family Interface:
Is a Preference for Multitasking Beneficial?

Karen Korabik
University of Guelph

Tricia van Rhijn
University of Guelph

Roya Ayman
Illinois Institute of Technology

Donna S. Lero
University of Guelph

Leslie B. Hammer
Portland State University

Abstract

This study examined how polychronicity, or the preference to do several things concurrently, was related to work and family overload, work-family (W-F) conflict, and outcomes in the work, family and life domains (i.e., turnover intent, family and life satisfaction). Using Conservation of Resources theory as a framework, polychronicity was conceptualized as a resource that could be used to reduce work and family overload. The participants were 553 employed parents from Canada and the United States. Results indicated that polychronicity was related to lower work overload. Lower work overload was related to lower work interference with family conflict, lower turnover intent, and higher family and life satisfaction. We also examined gender differences and found that, although women scored significantly higher than men on family overload and family satisfaction, and significantly lower than men on life satisfaction, there was no mean gender difference on polychronicity. In addition, the path coefficients in the model were not significantly different for men and women.

Keywords: work-family, polychronicity, multitasking, gender, role overload

Introduction

The increasing complexity of modern life has brought about the need for people to do more in less time, attend to many different things at once, and deal with more frequent interruptions. This applies particularly to employed parents who are caught in a time crunch while trying to address the myriad of conflicting work and family demands they face on a daily basis (Korabik, Lero, & Whitehead, 2008). Work-family (W-F) conflict is a significant problem for today's working parents (Hammer & Demsky, forthcoming) and has been associated with a number of detrimental outcomes (Korabik et al., 2008). However, thus far attention has been focused primarily on variables within the work and family domains as predictors of W-F conflict and only a limited set of individual difference variables have been considered (Michel, Mitchelson, Kotrba, LeBreton, & Baltes, 2009).

In this study we drew upon Conservation of Resources theory (COR; Westman, Hobfoll, Chen, Davidson, & Laski, 2004) to provide a framework for how one such important individual difference variable, polychronicity, or the preference to manage time by doing more than one thing at a time, would be related to the W-F interface. More specifically, we examined a structural model pertaining to how polychronicity was associated with work and family overload, W-F conflict, and outcomes in the work, family, and life domains. Because women's multiple role demands can put them at greater risk for detrimental outcomes (Westman, et al, 2004), we also looked at how gender affected these relationships.

In COR theory personal characteristics are viewed as key resources that assist people in maximizing their gains and minimizing their losses (Westman et al., 2004). Although polychronicity has never been investigated in the context of COR theory, it is arguably such a resource. By helping people manage their activities more efficiently, polychronicity would allow them to save time and energy, producing resource gains that could be applied to reducing W-F conflict. A better understanding of the role of polychronicity in the W-F interface, therefore, could lead to the design of interventions that might result in beneficial outcomes for both individuals and the organizations for which they work.

Polychronicity

Time management orientation (TMO) is an individual difference variable that pertains to one's preference about the utilization of time. It has been labelled variously in the literature as time management preference, time use orientation, time management style, time use strategy, and preferred pattern of time utilization. TMO is conceptualized as falling on a continuum with a preference for monochronicity at one pole and a preference for polychronicity at the other pole (Bluedorn, Kalliath, Strube, & Martin, 1999). People with a monochronic TMO prefer to complete one task at a time, whereas those with a polychronic TMO like to work on more than one task simultaneously.

Polychronicity has been shown to be important for employee performance in today's fast-paced business environments (Kantowitz, Grelle, Beaty, & Wolf, 2012). It is often touted as a

strategy that allows individuals to be more successful by getting more accomplished. Research suggests that those higher in polychronicity can accomplish more in a specific time period than those who prefer to operate more monochronically. For example, Kantowitz et al. (2012) found that more polychronic call center employees handled calls in less time. In addition, their results showed a positive association between polychronicity and several job performance indicators. Other research has indicated that polychronicity is related to enhanced creativity and better job performance (e.g., see Fournier, Weeks, Blocker, & Chonko, 2013; Karatepe, Karadas, Azar, & Naderiadib, 2013). This evidence indicates that polychronicity is a resource for individuals in conditions where there are multiple conflicting demands.

The literature often fails to distinguish between polychronicity (an attitudinal preference) and related constructs such as multitasking or task switching behaviors (König & Waller, 2010; Poposki & Oswald, 2010). This can be problematic because, in addition to the conceptual confusion it produces, different operationalizations and different methods (e.g., laboratory and naturalistic experiments, surveys) have been used to study these related constructs and this often produces conflicting results. König and Waller (2010) draw a contrast between polychronicity (the *preference* for doing more than one thing at a time) and multitasking (the *behavior* of doing more than one thing simultaneously). According to this definition, polychronicity can be described as the preference for engaging in multitasking behavior.

When distinguishing between polychronicity and task switching behavior, it is important to consider the types of tasks and the time interval involved. Task switching behavior as studied by cognitive psychologists typically involves switching attention very quickly (in a matter of milliseconds) between very simple tasks in laboratory settings (König & Waller, 2010). By contrast, polychronicity relates to how one prefers to complete more complicated tasks that span a longer time frame. In the present study, we chose to focus on polychronicity rather than on task switching because of its greater relevance for how individuals actually prefer to manage their multiple work and family demands, and hence its potential relationship to the conflict that may be experienced when managing multiple roles.

Polychronicity and role overload

Role overload in the work and family domains is a significant problem that has been linked to W-F conflict in the form of work interference with family (WIF) and family interference with work (FIW) conflict. In turn, WIF and FIW have been shown to have a wide variety of negative consequences, most notably dissatisfaction in the job, family and life domains (Korabik, et al., 2008).

The results of the few studies that have examined the relationship between polychronicity and role demands have been mixed. In line with COR theory predictions, some studies indicate that polychronic attitudes help one to cope with multiple roles and responsibilities. For example, those who are more polychronic better manage interruptions in their schedules and enjoy occupations that involve balancing many tasks while integrating conflicting demands (Kaufman-Scarborough & Lindquist, 1999). Those with a greater preference for polychronicity also report

feeling less overloaded by the demands from their multiple roles than those with a more monochronic orientation (Kantowitz et al., 2012; Kaufman, Lane, & Lindquist, 1991).

By contrast, detrimental effects have been found in other research. For example, Heinen (2005) found that those who were more polychronic reported more interrole conflict than those lower in polychronicity. Moreover, W-F multitasking has been linked to higher WIF, particularly among those with more schedule control in their jobs (Schieman & Young, 2010). This appears to be because those with more flexible job schedules are more likely to take work home with them resulting in greater role blurring and interrole interference. Along the same line, Voydanoff (2005) found that W-F multitasking at home mediated the relationship between boundary spanning demands and WIF. In addition, studies indicate that frequent media multitasking (i.e., using more than one media device concurrently) is detrimental for social well-being (Pea et al., 2012) and cognitive functioning (Ophir, Nass, & Wagner, 2009). Research also has demonstrated that switching from one task to another can sometimes have negative consequences for performance because the brain can only handle so much information at one time (Rubenstein, Meyer, & Evans, 2001).

The present study

One aim of this study was to examine the impact of polychronicity on W-F conflict and its outcomes. Although polychronicity has been widely studied in the work context, previous research in the family context has been confined to investigations of multitasking. To date, no study has examined the role of polychronicity using a comprehensive model of the W-F interface that incorporates both the work and family domains. For the present research, we started with a basic model of W-F conflict that included the variables of work and family overload; WIF and FIW; and outcomes in the work, family and life domains (i.e., turnover intention, family satisfaction, and life satisfaction).

We then proposed a target model in which polychronicity was considered as an antecedent to work and family overload (see Figure 1). Kline (2011) has discussed the problems that can arise due to the failure to consider alternative SEM models. Therefore, to increase the rigour of our analyses, we employed an alternative models approach (Kline, 2011) whereby we also specified two theoretically plausible competing models (see Figures 2 and 3). This allowed us to compare the three models to see which ones best fit the data, as well as to examine the hypothesized path coefficients.

General predictions

We based our hypotheses about the interrelationships of role overload, WIF and FIW, and the outcome variables (see Figure 1) on the results of several recent meta-analytic path analyses. For example, based on the results of Michel et al.'s (2009) meta-analytic path analysis, we modeled the direction of the relationship between WIF and FIW as going from FIW to WIF (path 1).

In typical W-F conflict models, work and family overload are hypothesized to be positively associated with within-domain conflict. Supporting this, meta-analytic path analyses by both Byron (2005) and Ford, Heinen, and Langkamer (2007) have indicated that work overload is the strongest predictor of WIF, whereas family overload is the strongest predictor of FIW. Based on this we predicted that work overload would be positively associated with WIF (path 2) and family overload would be positively associated with FIW (path 3).

In regard to the relationships between the W-F conflict variables and the outcomes of job and family satisfaction, meta-analytic path analyses have indicated that WIF and FIW are negatively related to both within-domain and cross-domain satisfaction (Michel et al., 2009; Shockley & Singla, 2011). In the present study, we used turnover intent instead of job satisfaction as our outcome variable in the work domain because: (1) meta-analysis has demonstrated that turnover intention is significantly negatively associated with job satisfaction (Hellman, 1997), (2) turnover intent is more distal to W-F conflict than is job satisfaction, and (3) turnover intent is of greater practical value to organizations, as it is one of the most reliable predictors of voluntary turnover (Hom & Griffeth, 1995). Based on the above, we predicted that there would be significant positive relationships between WIF and FIW and turnover intent (paths 4 and 5, respectively). In addition, we expected that there would be significant negative relationships between WIF and FIW and family satisfaction (paths 6 and 7, respectively).

Finally, in models of the W-F interface, life satisfaction is frequently hypothesized to be an outcome of both job and family satisfaction. These relationships were supported by Michel et al.'s (2009) meta-analytic path analysis. These findings led us to expect that there would be a significant positive relationship between family satisfaction and life satisfaction (path 8) and a significant negative relationship between turnover intent and life satisfaction (path 9).

Figure 1. Hypothesized Antecedent Model of Time Orientation and the W-F Interface

Figure 2. Hypothesized Independent Antecedent Model of Time Orientation and the W-F Interface

Figure 3. Hypothesized Mediator Model of Time Orientation and the W-F Interface

Model specific predictions

In COR theory, role overload is viewed as a contextual demand or stressor that can result in stress (e.g., W-F conflict) and ultimately strain in the form of negative outcomes (Westman et al., 2004). The theory postulates that individuals will expend key resources (e.g., polychronicity)

in several different ways, including to directly alleviate stressors or to directly reduce stress or strain (Westman et al., 2004). In our target model (see Figure 1), polychronicity was conceptualized as an antecedent to work and family overload. That is, polychronicity was viewed as a key resource that, by increasing their efficiency, would help individuals to better cope with the stressors/demands of work and family overload. The subsequent time and energy gains could then translate into lower WIF and FIW. The predictions resulting from this model were that there would be significant negative relationships between polychronicity and work overload (path 10) and between polychronicity and family overload (path 11).

Unlike Model 1, in which work and family overload are viewed as mediators between polychronicity and W-F conflict, in Model 2 (see Figure 2) polychronicity was seen as a direct independent antecedent, along with work and family overload, of WIF and FIW. COR theory postulates that people who possess more resources will be less vulnerable to resource loss and views W-F conflict as a form of resource loss (Westman et al., 2004). Within this framework, high polychronicity would be a resource that could directly protect against the resource loss posed by W-F conflict (both WIF and FIW), independently of the amount of overload experienced. This model stipulates that there will be a significant negative relationship between polychronicity and WIF (path 12) as well as a significant negative relationship between polychronicity and FIW (path 13).

In the third model (see Figure 3), polychronicity is hypothesized to mediate the relationships between work and family overload and WIF and FIW. According to COR theory, the threat posed by a stressor will motivate the investment of resources. Here, the experience of role overload in the work or family domain would presumably motivate an individual to invest personal resources (polychronicity) (paths 14 and 15, respectively) and this would, in turn, help to alleviate WIF (path 16) or FIW (path 17). The notion that polychronicity may be a consequence rather than an antecedent of role demands has been mentioned previously in the literature. For example, König and Waller (2010) argue that environments that are very demanding may require multitasking behavior for successful performance and those who survive in such settings may develop a preference for polychronicity. Similarly, Hecht and Allen (2005) suggest that the more individuals are required to multitask, the more they prefer to do so.

Gender differences

A second purpose of this study was to examine the role of gender in the relationships among polychronicity, role overload, W-F conflict, and outcomes. It is important to consider the moderating effects of gender since it is well-documented that men and women often experience the W-F interface differently (Korabik, et al., 2008). Furthermore, according to COR, the multiple role demands that women face increase their chances of resource loss, putting them more at risk of experiencing negative outcomes (Westman et al., 2004).

In terms of polychronicity, despite numerous anecdotal accounts touting women's superior multitasking abilities (Pease & Pease, 2003, as cited in Buser & Peter, 2011), the literature presents a very complex picture. Some studies have found no gender differences in

time use preference (Kaufman et al., 1991; Palmer & Schoorman, 1999) or in subjective or objective productivity while multitasking (Buser & Peter, 2011; Offer & Schneider, 2011). Nonetheless, in other research “gender differences have been found in time allocation, time conflict, and perceptions of work versus leisure” (Cotte & Ratneshwar, 1999, pg.190). Moreover, in a study of dual career couples, mothers reported engaging in more multitasking behavior, particularly on nonwork activities, than did fathers (Offer & Schneider, 2011). However, in that study, mothers’ additional multitasking behavior was found to be associated with negative effects including increased stress and W-F conflict (Offer & Schneider, 2011). This may offer an explanation for Buser and Peter’s (2011) finding that when given a choice, women express a lesser preference for multitasking than men do. In the present study, we looked both at whether the path coefficients in our structural model were different as a function of gender and also at whether there were mean differences between men and women on the variables that were assessed.

Methods

Participants

The sample was comprised of a subset ($N = 533$) of the data from a larger, multinational study of the work-family interface (Project 3535; see Korabik, Lero, & Ayman, 2003). The participants for this study were 195 men and 118 women from Canada and 54 men and 166 women from the United States who were organizationally employed in a variety of job positions and industries. All participants were partnered (i.e., married or cohabitating) and had at least one child under the age of 21 residing with them. Their age ranged from 21 to 68 ($M = 41$, $SD = 7.83$). The 247 men (46.3%) ranged in age from 21 to 61 ($M = 39.4$, $SD = 7.26$) and the 284 women (53.3%) ranged in age from 24 to 68 ($M = 42.6$, $SD = 7.99$). The women were significantly older than the men, $t = -4.73$, $p < .001$. Participants were almost equally divided between managerial and nonmanagerial positions (51.2% and 48.8% respectively). Men were significantly more likely to be in managerial positions than women, $\chi^2(1) = 36.9$, $p < .001$, with 62.6% of men and 36.1% of women in managerial positions.

Procedure

A survey, containing the measures detailed subsequently, among others, was constructed in English by the Project 3535 research team. In Canada, a French version created by a translation/back-translation procedure (Brislin, 1980) was also made available. This version was completed by 25% of the Canadian sample. Participants came primarily from the health care, manufacturing, and educational sectors. They were recruited through the organizations for which they worked. Representatives from individual organizations either made a link to an on-line survey available to their employees or distributed paper-and-pencil copies to them on behalf of the researchers.

Measures

Polychronicity was assessed via five items from the Inventory of Polychronic Values, modified to refer to individual values as suggested by Bluedorn et al. (1999). A 6-point scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*), where higher scores indicated greater polychronicity was employed. Sample items from this scale are, “I like to juggle several activities at the same time.” and “I prefer to do one thing at a time.” The Cronbach alphas for men and women were .73 and .71, respectively.

Work overload was assessed by a 4-item scale developed by Peterson et al. (1995). The 4-item family overload scale was adapted from this measure by changing the referent from work to home life. A 6-point scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*), where higher scores indicated greater perceptions of overload was used. A sample item is, “I feel overburdened in my role.” The Cronbach alphas for work overload were .89 (men) and .92 (women); for family overload they were .87 (men) and .91 (women).

W-F conflict was evaluated using the time-based WIF and FIW subscales from Carlson, Kacmar and Williams’ (2000) measure. We used only the time-based subscales from this measure because they were the most relevant to our investigation of polychronicity. Two subscales were used (each with 3 items) to assess time-based WIF and FIW. Items were measured on a 6-point scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*) where higher scores indicated more conflict. A sample item is “My work keeps me from my family activities more than I would like.” The Cronbach alpha for WIF was .86 for both men and women; for FIW it was .66 for men and .72 for women.

Turnover intent was assessed with three items from Camman, Firschman, Jenkins and Klesh (1979) plus one reverse coded item “I am generally satisfied with the kind of work that I do.” added by the Project 3535 research team. Items were rated on a 6-point scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*), with higher scores indicating greater intentions to leave. A sample item is “I will actively look for work in the new year.” The Cronbach alphas for men and women were .89 and .87, respectively.

Family satisfaction was measured by two items adapted from Hackman and Oldham’s (1975) job satisfaction scale and four items developed by the Project 3535 research team. Three of the items were rated on a 6-point scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). The remaining 3 items were rated on 5-point scale ranging from 1 (*very dissatisfied*) to 5 (*very satisfied*). Higher scores were indicative of greater satisfaction. A sample item is, “Generally speaking, I am very satisfied with my family.” The Cronbach alphas for men and women were .80 and .82, respectively.

Life satisfaction was assessed with Diener, Emmons, Larsen and Griffin’s (1985) five item scale. Responses were made using a 6-point scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*), with higher scores indicating greater satisfaction. A sample item is, “In most ways my life is close to ideal.” The Cronbach alphas for men and women were .88 and .89, respectively.

Gender was assessed by a single item question asking if the respondent was a male (coded as 1) or female (coded as 2).

Results

Descriptive analyses

Descriptive details of the study variables are provided in Table 1, including means, standard deviations, and intercorrelations for men and women.

Table 1. *Means, Standard Deviations, and Intercorrelations of Study Variables by Gender^a*

	Men		Women		1	2	3	4	5	6	7	8
	Mean	SD	Mean	SD								
1. Polychronicity	15.59	3.99	16.12	4.06	--	-.22**	.02	-.06	.02	.02	-.17**	-.23**
2. Work Overload	13.80	4.68	12.92	4.81	-.11	--	.28**	.49**	.12	-.28**	.37**	-.35**
3. Family Overload	10.01	3.66	12.84	4.91	-.09	.19**	--	.21**	.20**	-.38**	.12	-.23**
4. Time-based WIF	12.20	3.22	10.95	3.73	-.13*	.50**	.21**	--	.25**	-.31**	.40**	-.34**
5. Time-based FIW	8.17	2.84	7.87	3.11	-.03	.11	.17**	.34**	--	-.19**	.21**	-.24**
6. Family Satisfaction	27.11	3.30	26.94	4.07	.04	-.09	-.32**	-.18**	-.09	--	-.24**	.62**
7. Turnover Intention	11.13	4.69	9.86	4.87	-.05	.36**	.03	.32**	.06	-.19**	--	-.41**
8. Life Satisfaction	16.43	3.64	16.63	3.98	.12	-.22**	-.30**	-.26**	-.11	.68**	-.36**	--

Note. *N* for Men ranges between 240 and 248; *N* for Women ranges between 275 and 280.

^aIntercorrelations above diagonal are for men and below diagonal are for women

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

Measurement equivalence/invariance

Before proceeding with the model testing, all of the measures were examined to see if they had measurement equivalence/invariance (ME/I) for gender. Establishing ME/I allows one to determine that members of different groups ascribe the same meaning to scale items (Milfont & Fischer, 2010) and that any differences found are true differences on the construct of interest instead of differing psychometric responses to the scale items (Cheung & Rensvold, 2002). This may be particularly important in the case of W-F conflict, as the literature is filled with mixed findings regarding the impact of gender (Korabik et al., 2008).

ME/I involves the imposition of increasingly stringent nested constraints on a measurement model (Steenkamp & Baumgartner, 1998). A hierarchical sequence exists whereby configural invariance is examined first, then weak invariance, and then strong invariance. Configural invariance indicates that the data from each group have the same factor structure. Weak invariance indicates that the magnitude of the factor loadings is equivalent across groups. Strong invariance indicates that the item intercepts are identical, which is a necessary prerequisite for comparisons of group means (Milfont & Fischer, 2010). If strong invariance is not found, partial strong invariance can be established by relaxing some of the nonvariant intercepts. Byrne (2012) argues that this is acceptable if only a few indicators are relaxed. In

addition to each model having good fit, the fit of each sequential model should not be significantly worse than that of the proceeding model. The difference in fit between the two models is assessed using the Likelihood Ratio Test (the difference in χ^2 between the two nested models).

We assessed the ME/I for gender of each of the eight constructs in our SEM models. Configural and weak invariance were demonstrated for all of the variables, indicating that men and women ascribed similar meaning to the constructs. In addition, strong invariance was demonstrated for four variables: polychronicity, work overload, family overload, and family satisfaction, providing evidence of similarity in the item intercepts for men and women. Partial strong invariance was demonstrated for the remaining four study variables: WIF, FIW, turnover intention, and life satisfaction. In each of these cases, the freeing up of one particular item intercept allowed for partial strong invariance to be demonstrated. The following items were those that were not invariant (and freed up for the analysis): WIF – “I have to miss family activities due to the amount of time I must spend on work responsibilities”; FIW – “Tension and anxiety from my non-work life often extend into my job”; turnover intention – “I am generally satisfied with the kind of work I do in my present job (R)”; and, life satisfaction – “So far I have gotten the important things I want in life”. After this was done, there was good evidence for the equality of factor loadings and the majority of item intercepts for these measurement models across gender.

Testing the alternative models

SEM was used to compare the competing models (e.g., antecedent, independent antecedent, and mediator, see Figures 1, 2, and 3, respectively) to determine which model best represented how polychronicity was situated in regard to the W-F interface. In particular, the models were evaluated using robust maximum likelihood estimation (MLR) with Mplus software (Version 6.11) because the estimates provided are robust to non-normality (Muthén & Muthén, 1998-2010).

Multiple goodness-of-fit indices were reviewed to assess model fit including chi-square (χ^2), the root mean square error of approximation (RMSEA), the comparative fit index (CFI) and the Tucker-Lewis Index (TLI). Although good fitting models will have nonsignificant ($p < .05$) chi-square values, models with large sample sizes will almost always be statistically significant (Kline, 2011), not necessarily indicative of a lack of fit. Models with RMSEA values of .05 or less have good fit; however, RMSEA values of .08 or less are reasonable (Kline, 2011). Values close to 1 for the CFI and TLI are considered to signify a very good fit, while models with fit indices of less than 0.9 require substantial improvement (Arbuckle, 2006). In addition, in order to compare these competing but non-nested models, Akaike's Information Criterion (AIC) was used as a parsimonious fit measure where lower values are indicative of better fit.

Adequate fit was demonstrated for only two of the three models: the antecedent model and the independent antecedent model (see Table 2). This eliminated the mediator model from further consideration. The antecedent and independent antecedent models had almost identical

fit. However, in the independent antecedent model, the coefficients for the paths between polychronicity and both WIF (path 12) and FIW (path 13), the paths that were the distinguishing features of this model, were not significant. Thus, because there was no support for the theory that there would be a direct relationship between polychronicity and W-F conflict, no further consideration was given to this model.

Table 2. *Fit Statistics for Competing Models*

Models	χ^2 (df)	RMSEA	CFI	TLI	AIC	Standardized factor loadings (range)
1. Antecedent	908.10 (475)**	.04	.93	.93	47634.05	-.04 – .93
2. Independent antecedent	889.98 (472)**	.04	.93	.93	47618.72	-.04 – .93
3. Mediator	2106.26 (480)**	.08	.75	.73	49061.54	.12 – .93

The antecedent model, therefore, was used for the remaining analyses. Examination of the path coefficients in the antecedent model indicated that those for the following paths were significant in the predicted direction: (1) FIW to WIF, (2) polychronicity to work overload, (3) work overload to WIF and family overload to FIW, (4) WIF to both family satisfaction and turnover intent, and (5) both family satisfaction and turnover intent to life satisfaction. Contrary to expectation, the coefficients for the paths from polychronicity to family overload and from FIW to both family satisfaction and turnover intent were not significant.

Next, conceptually meaningful modifications to the antecedent model were considered to see if the fit of the model could be improved. Examination of the modification indices revealed only one conceptually meaningful modification, the addition of a direct path from family overload to family satisfaction ($MI = 33.75$) as supported by the findings of Michel et al. (2009). The addition of this path resulted in a significant improvement in model fit based on the significant decrease in the chi-square statistic from 908.10 (475), $p < .001$ to 869.95 (474), $p < .001$ ($\Delta S-B\chi^2(1) = 177.00$, $p < .001$). The final model with standardized estimates is provided in Figure 4.

A significant amount of variance was explained in four of the dependent latent variables - WIF ($R^2 = .44$), family satisfaction ($R^2 = .17$), turnover intention ($R^2 = .17$), and life satisfaction ($R^2 = .63$) - by their respective predictor variables. Only a small amount of variance was explained in the remaining dependent latent variables: work overload ($R^2 = .04$), family overload ($R^2 = .002$), and FIW ($R^2 = .03$).

GENDER, POLYCHRONICITY, & WORK-FAMILY

Figure 4. Model 4: Final Modified Antecedent Model with Standardized Estimates

Note: $N = 520$; $*p < .05$; $**p < .01$; Dotted lines indicate non-significant paths.

Gender differences

Finally, we looked at whether there were gender differences in the relationships among the constructs in the antecedent model as well as whether mean gender differences existed on the constructs in the model. First, the fit of the antecedent model was examined separately for men and women. The model demonstrated adequate fit for both genders, although the fit was slightly better for men than for women: Men ($n = 243$) $S-B\chi^2$ (df) = 685.64 (474), $p < .01$; $RMSEA = .04$, $CFI = .93$, $TLI = .93$, $AIC = 21427.19$; Women ($n = 273$) $S-B\chi^2$ (df) = 800.93 (474), $p < .01$; $RMSEA = .05$, $CFI = .91$, $TLI = .90$, $AIC = 25678.70$. Then, the model was tested for gender invariance by running an unconstrained multi-group model (step 1), constraining paths in the model to be equal for men and women (step 2), and constraining the means of the latent variables in the model to be equal for men and women (step 3).

Figure 5. Final Modified Antecedent Model with Standardized Estimates for Structural Paths by Gender

Note: Estimates are for Men ($n = 243$)/Women ($n = 273$); $*p < .05$; $**p < .01$; Dotted lines indicate non-significant paths.

The overall models for men and women were not significantly different as evidenced by the Sartorra-Bentler chi square difference test between step 1 and step 2 ($\Delta S-B\chi^2$ (34) = 18.60, $p = .99$). To check each of the structural paths individually, each path in the model was then tested for gender differences in the path coefficients using a Wald Test of Parameter Constraints. No significant differences were found indicating that all of the relationships among the constructs in the model were the same for men and women. The model with standardized estimates for men and women separately is provided in Figure 5. Finally, constraining the means of the latent variables to be equal resulted in a significant chi square change ($\Delta S-B\chi^2$ (8) = 60.91, $p < .001$). This indicated that the latent means were not structurally invariant and that gender differences existed in at least some of the latent means. In order to test for the differences, the means for men were constrained to zero and those for women were allowed to freely estimate. The results

demonstrated that women had significantly higher means than men for family overload, $p < .0001$, and family satisfaction, $p < .01$, as well as a significantly lower mean for life satisfaction, $p < .02$. The gender difference for polychronicity, however, was not significant, $p = .44$.

Discussion

Examining a target model in relation to two theoretically plausible alternative models helped to clarify where polychronicity might be situated in the W-F interface and what its relationships to key outcomes might be. Of the models tested, the mediator model, which postulated that polychronicity would mediate the relationships between role overload and W-F conflict, was eliminated from consideration because it did not have adequate fit to the data. The independent antecedent model proposed that polychronicity would be directly related to the W-F conflict variables (WIF and FIW), whereas in the antecedent model polychronicity was viewed as being antecedent to work and family overload. Because polychronicity was not directly related to either WIF or FIW, there was a lack of support for the predictions from the independent antecedent model.

The antecedent model not only fit the data well, but it also helped to elucidate some potential mechanisms (lower work overload and WIF) through which polychronicity could be related to beneficial work and family outcomes (i.e., lower turnover intent and higher family and life satisfaction). We found, however, that polychronicity had a differential impact in the work and family domains. In the work domain, polychronicity was related to lower work overload. Lower work overload was associated with lower WIF and lower WIF was associated with lower turnover intent and higher family and life satisfaction. In the context of COR theory, these results suggest that, by assisting individuals to manage time more efficiently, polychronicity functions as a key personal resource that is proactively invested to protect against the threat of resource loss in the form of work overload (Westman et al., 2004). These results also are congruent with results from previous meta-analytic path analyses showing that work overload has a positive relationship with WIF and that WIF is positively related to turnover intent and negatively related to family and life satisfaction (Byron, 2005; Michel et al., 2009). Moreover, the findings are consistent with two past studies that have found a direct negative relationship between polychronicity and turnover intent (Arndt, Arnold, & Landry, 2006; Jang & George, 2012).

Polychronicity had much less of an impact in the family domain. It was not directly related to family overload or to FIW. This suggests that those higher in polychronicity may be less able to influence the degree that their family interferes with their work lives by managing their family overload. Several factors might help to explain this result. First, although the items on the IPV are not specific to tasks in the work versus family domains, the measure was constructed and validated primarily in work settings and may not be as relevant to what occurs in the family environment. This needs to be investigated in future research using a measure of polychronicity that separates preferences for time management in the work and family domains.

Second, the nature of FIW may also account for the lack of effects. Much research has demonstrated that work interferes with family to a much greater extent than family interferes with work (e.g., Frone, Russel, & Cooper, 1992). This results in a restricted range on FIW which, along with the relatively lower internal consistency reliability of the subscale, may attenuate the extent to which it can correlate with other variables. Third, research indicates that individuals are much more likely to engage in two work-related activities at the same time than to do two family-related activities simultaneously (Offer & Schneider, 2011). The lower base rate of multitasking in the family domain may explain why polychronicity was not related to lower family overload.

We found no evidence of gender differences related to polychronicity either in mean differences or in the path coefficients in our model. These findings are congruent with those indicating no mean gender differences in time use preference (Kaufman et al., 1991; Palmer & Schoorman, 1999). Other research that has found evidence of gender differences has looked at multitasking behavior, preference for multitasking, time allocation, time conflict, and perceptions of work versus leisure (Buser & Peter, 2011; Cotte & Ratneshwar, 1999; Offer & Schneider, 2011), which are arguably not quite the same constructs.

Although those who are more polychronic generally do perform better than those who are more monochronic on tasks that require multitasking (Kantowitz et al., 2012), polychronicity and multitasking are often not related to one another (König & Waller, 2010). This is because situational constraints may prevent those who prefer to manage time more polychronically from doing so, or conversely force more monochronic individuals to engage in multitasking behavior. Thus, as we found, there may be no gender differences in the extent to which employed men and women with children prefer to do tasks simultaneously or sequentially. Despite this, women's social roles may necessitate that they engage in more multitasking behavior, particularly regarding household and childcare tasks, than do men (Offer & Schneider, 2011). This has been related to lower well-being for women (Offer & Schneider, 2011) and may contribute to the lower preference for compulsory multitasking that has been found among women than men (Buser & Peter, 2011). To properly understand the relationships among these related constructs, however, research is needed that examines gender differences using multiple time-related constructs within the same study. For example, it would be useful to examine how polychronicity is related to the degree and effectiveness of multitasking that occurs under conditions where multitasking is voluntary versus involuntary. Contextual factors such as the type of task and degree of cognitive overload involved also need to be investigated.

The present study contributes to the sparse previous research literature on polychronicity as it relates to the W-F interface. Previous research has been confined to studying the relationship between W-F multitasking, assessed by a single survey item, and WIF (Schieman & Young, 2010; Voydanoff, 2005) or the frequency and impact of multitasking in the work and family arenas on well-being (Offer & Schneider, 2011). By contrast, we examined integrative models of the interrelationships among polychronicity, role overload, WIF and FIW, and outcome variables in the work, family, and life domains using a large sample of men and women

parents who were employed in both managerial and nonmanagerial positions in a wide variety of organizations in Canada and the US. Moreover, most previous W-F research has focused on interventions aimed at bringing about beneficial effects through directly decreasing role overload or W-F conflict. Very few studies have examined individual difference variables or variables (other than social support) that might act as antecedents to role overload. We have expanded the theory and research in the W-F area by demonstrating that greater polychronicity is related to lower work overload. The findings of our study are congruent with an extensive amount of W-F research that has demonstrated that lower work overload is related to lower WIF and that many beneficial outcomes in both the work and family domains are associated with lower levels of WIF (Korabik et al., 2008).

There are some limitations to this study. First, we used the IPV as our measure of polychronicity. Although the IPV is the most widely used measure of polychronicity, it has been criticized because it combines items that assess personal preference and behavior with those that assess cultural beliefs about the best way to do things (König & Waller, 2010; Popinski & Oswald, 2010). Although distinguishing between the two types of items enhances conceptual clarity (König & Waller, 2010), there is disagreement about the need to separate them on empirical grounds. Popinski and Oswald (2010) created the Multitasking Preference Inventory (MPI), which does not include items related to cultural beliefs. They found that the MPI items loaded on a separate factor from items on measures, like the IPV, that included both types of items. However, the two factors were highly intercorrelated ($r=.89$). Moreover, in an analysis of items from the MPI, IPV, and two other popular measures of polychronicity Sanderson (2012) found greater support for a single overarching factor representing polychronicity than for a two factor (individual preference items versus cultural belief items) solution. In the latter case the correlation between the 2 subfactors was $r=.99$, strongly supporting the conclusion that the preference and belief items are not distinct from one another. Similarly, our own analyses indicate that the five IPV items have internal consistency reliability and a unidimensional factor structure, as well as ME/I (i.e., equality of factor structures, equality of item factor loadings, and equality of item intercepts) across both culture (US vs. Canada) and gender (men vs. women). Taken together, this psychometric evidence indicates that the items pertaining to individual preference and those pertaining to cultural norms do not need to be empirically distinguished from one another, but can be included together on a single latent variable as we have done. Despite this, future research is needed to examine any circumstances under which the preference and cultural norm items might produce differential results.

Second, it is possible that our results were contaminated by common method variance. However, the complexity of the models tested and the fact that Harman's single-factor test explained only 23.28% of the variance mitigate against this. Third, because the data were cross-sectional in nature, one cannot impute causality from them. Future longitudinal research should be carried out to verify our results.

Fourth, the heterogeneity of the sample, although it had the effect of increasing the generalizability of the results, may have resulted in uncontrolled extraneous variables affecting

the results. Finally, all of the data were collected in North America. Future research using multinational samples is necessary to assess the cross-cultural generalizability of these results.

In conclusion, its limitations notwithstanding, this study highlighted the value of polychronicity as a resource for individuals facing demanding situations. We found good fit for a model that might help to explain why greater polychronicity is related to advantageous outcomes. Future research should be directed at further investigating how polychronicity impacts role overload and conflict in the family domain. As well, the role of polychronicity in the positive side of the W-F interface (e.g., positive spillover, enhancement, enrichment) should be examined. Moreover, the effects of moderator variables, in addition to gender, should be studied. For example, contextual moderator variables, like job level, schedule control, work-family role identities, and organizational climate, have been identified as being potentially important (Kossek & Lautsch, *in press*; Schieman & Young, 2010). Finally, research on polychronicity would be greatly enriched by incorporating concepts and variables from other similar theories, particularly those related to multitasking (König & Waller, 2010) or boundary management (Kossek & Lautsch, *in press*).

Our results indicate that employed parents with a greater preference for polychronicity report having lower work overload than those who are more monochronic and that lower work overload was related to lower WIF conflict, which was associated with lower turnover intent and higher family and life satisfaction for both men and women. These results are important not only for individual employee well-being, but also for employers who will benefit from happier employees and lower turnover costs.

In terms of implications for individuals, those who are more monochronic should try to better understand how their time management style fits with the demands of their work environments. They may wish to choose jobs to which they are more suited or learn time management techniques that allow them to work more efficiently (Kaufman-Scarborough & Lindquist, 1999). Employers can facilitate this by: (1) doing job analyses and providing potential employees with accurate job descriptions, (2) providing realistic job previews, and (3) making time management training available (Fournier et al., 2013). An emphasis on person-job fit could reduce the potential for turnover among those who are more monochronic.

Our results also have implications for organizations. It is possible that in this study those who were more polychronic fared better than those who were more monochronic because they were better able to cope with the demands of today's fast-paced work environments. However, this does not mean that those higher in polychronicity are immune from suffering performance decrements when situations become overly demanding (Hecht & Allen, 2005). Employers need to be cognizant of the fact that role overload is endemic among employees who are trying to juggle multiple work-life responsibilities (Korabik, et al., 2008). To help alleviate this, employers should foster an atmosphere that gives all employees the ability to create work situations that maximize their performance potential. This includes letting employees have more control over task pacing and how their time is allocated to tasks, as well as attending to ways to reduce undesirable levels of work interruptions. In addition, providing workers with greater job

enrichment in the form of the opportunity to work on a wider variety of different tasks, more job flexibility, and increased organizational support should also prove to be beneficial.

References

- Arbuckle, J. (2006). *Amos 7.0 User's Guide*. Spring House, PA: Amos Development Corporation.
- Arndt, A., Arnold, T.J. & Landry, T.D. (2006). The effects of polychronic-orientation upon retail employee satisfaction and turnover. *Journal of Retailing*, 82 (4), 319–330.
- Bluedorn, A. C., Kalliath, T. J., Strube, M. J., & Martin, G. D. (1999). Polychronicity and the Inventory of Polychronic Values (IPV): The development of an instrument to measure a fundamental dimension of organizational culture. *Journal of Managerial Psychology*, 14, 205–230.
- Brislin, R.W. (1980). Translation and content analysis of written materials. In H.C. Triandis and J. W. Berry (Eds.) *Handbook of cross-cultural psychology* (Vol. 2). Boston: Allyn & Bacon, 389-344.
- Buser, T., & Peter, N. (2011). Multitasking: Productivity effects and gender differences. Tinbergen Institute Discussion Paper TI 2011-044/3. Amsterdam: Tinbergen Institute.
- Byrne, B. (2012). *Structural equation modeling with Mplus: Basic concepts, applications, and programming*. New York, NY: Routledge.
- Byron, K. (2005). A meta-analytic review of work-family conflict and its antecedents. *Journal of Vocational Behavior*, 67, 169–198.
- Cammann, C., Firschman, M., Jenkins, D. & Klesh, J. (1979). *The Michigan organizational assessment questionnaire*. Unpublished manuscript. University of Michigan, Ann Arbor Michigan.
- Carlson, D.S., Kacmar, K.M., & Williams, L.J. (2000). Construction and initial validation of a multidimensional measure of work-family conflict. *Journal of Vocational Behavior*, 56, 249-276
- Chuang, G.W. & Rensvold, R. B. (2002). Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural Equation Modeling*, 9(2), 233–255.
- Cotte, J. & Ratneshwar, S. (1999). Juggling and hopping: What does it mean to work polychronically. *Journal of Managerial Psychology*, 14 (3/4), 184-204.
- Diener, E., Emmons, R.A., Larsen, R.J. & Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment*, 49, 71-75.
- Ford, M. T., Heinen, B.A., & Langkamer, K. L. (2007). Work and family satisfaction and conflict: A meta-analysis of cross-domain relations. *Journal of Applied Psychology*, 92, 57–80.

- Fournier, C., Weeks, W.A., Blocker, C.P. & Chonko, L.B. (2013). Polychronicity and scheduling's role in reducing role stress and enhancing sales performance. *Journal of Personal Selling & Sales Management*, vol. XXXIII, no. 2, pp. 197–209.
- Frone, M. R., Russell, M., & Cooper, M. K. (1992). Antecedents and outcomes of work-family conflict: Testing a model of the work-family interface. *Journal of Applied Psychology*, 77, 65-78.
- Hackman, J. R., & Oldham, G. R. (1975). Development of the job diagnostic survey. *Journal of Applied Psychology*, 50(2), 159-170.
- Hammer, L. B. & Demsky, C. A. (forthcoming). Work-life balance. In A. Day, K. Kelloway, & J. J. Hurrell, Jr. (Eds.), *Workplace well-being: Building positive and psychologically healthy workplaces*. Wiley Publications.
- Hecht, T.D. & Allen, N.J. (2005). Exploring links between polychronicity and well-being from the perspective of person–job fit: Does it matter if you prefer to do only one thing at a time? *Organizational Behavior and Human Decision Processes*, 98, 155- 178.
- Heinen, B. A. (2005, May). *Polychronicity as a moderator of the multiple roles-overload and –interrole conflict relationships*. Poster session presented at the annual meeting of the Society for Industrial and Organizational Psychology, Dallas, TX.
- Hellman, C. (1997). Job satisfaction and intent to leave. *Journal of Social Psychology*, 137 (6), 677- 689.
- Hom, P. W. & Griffeth, R. W. (1995). *Employee turnover*. Ohio: South-Western College.
- Jang, J. & George, R.T. (2012). Understanding the influence of polychronicity on job satisfaction and turnover intention: A study of non-supervisory hotel employees. *International Journal of Hospitality Management*, 31, 588– 595.
- Kantowitz, T.M., Grelle, D.M., Beaty, J.C., & Wolf, M.B. (2012), Time is money: Polychronicity as a predictor of performance across job levels. *Human Performance*, 25 (2), 114- 137.
- Karatepe, O.M., Karadas, G., Azar, A., & Naderiadib, N (2013). Does work engagement mediate the effect of polychronicity on performance outcomes? A study in the hospitality industry in Northern Cyprus. *Journal of Human Resources in Hospitality & Tourism*, 12, 52–70
- Kaufman, C. F., Lane, P. M., & Lindquist, J. D. (1991). Exploring more than 24 hours a day: A preliminary investigation of polychronic time use. *Journal of Consumer Research*, 18, 392–401.
- Kaufman-Scarborough, C., & Lindquist, J. D. (1999). Time management and polychronicity: Comparisons, contrasts, and insights for the workplace. *Journal of Managerial Psychology*, 14, 288–312.

- Kline, R. B. (2011). *Principles and practice of structural equation modeling* (3rd ed.). New York, NY: Guilford.
- König, C.J. & Waller, M.J. (2010). Time for reflection: A critical examination of polychronicity. *Human Performance*, 23, 173-190.
- Korabik, K., Lero, D., & Ayman, R. (2003). A multi-level approach to cross-cultural work-family research: A micro- and macro-level perspective. *International Journal of Cross-Cultural Management*, 3 (3), 289-303.
- Korabik, K., Lero, D.S., & Whitehead, D. L. (Eds). (2008). *Handbook of work-family integration: Research, theories and best practices*. San Diego, CA: Elsevier.
- Kossek, E. & Lautsch, B. (In press). Work-family boundary management styles in organizations: A cross-level model. *Organizational Psychology Review*.
- Michel, J. S., Mitchelson, J. K., Kotrba, L. M., LeBreton, J. M., & Baltes, B., B. (2009). A comparative test of work-family conflict models and critical examination of work-family linkages. *Journal of Vocational Behavior*, 74, 199-218.
- Milfont, T.L. & Fischer, R. (2010). Testing measurement invariance across groups: Applications in cross-cultural research. *International Journal of Psychological Research*, 3 (1), 2011-2084
- Muthén, L. K. & Muthén, B. O. (1998-2010). *Mplus user's guide* (6th ed.). Sixth Edition. Los Angeles, CA.
- Offer, S. & Schneider, B. (2011). Revisiting the gender gap in time-use patterns: Multitasking and well-being among mothers and fathers in dual-earner families. *American Sociological Review*, 76(6) 809– 833.
- Ophir, E., Nass, C., & Wagner, A.D. (2009). Cognitive control in media multitaskers. *Proceedings of the National Academy of Sciences*, 106 (37), 15583–15587.
- Palmer, D.K. & Schoorman, F.D. (1999). Unpackaging the multiple aspects of time in polychronicity. *Journal of Managerial Psychology*, 14 (3/4), 323-344.
- Pea, R., Nass, C., Meheula, L., Rance, M., Kumar, A., Bamford, H., Nass, M., Simha, A., Stillerman, B., Yang, S., & Zhou, M. (2012). Media use, face-to-face communication, media multitasking, and social well-being among 8- to 12-year-old girls. *Developmental Psychology*, 48 (2), 327-336.
- Peterson, M. F., Smith, P. B., Akande, A., Ayestaran, S., Bochner, S., Callan, V., Guk Cho, N., Correia, J., D'amorim, M., Francois, P. H., Hofmann, K., Koopman, P. L., Leung, K., Lim, T. K., Mortazavi, S., Munene, J., Radford, R., Ropo, A., Savage, G., Setiadi, B., Sinha, T. N., Sorenson, R., & Viedge, C. (1995). Role conflict, ambiguity and overload: A 21 nation study. *Academy of Management*, 38 (2), 429-452.

- Popinski, E.M. & Oswald, F.L. (2010). The Multitasking Preference Inventory: Toward an improved measure of individual differences in polychronicity. *Human Performance*, 23, 247-264.
- Rubinstein, J.S., Meyer, D.E., & Evans, J.E. (2001). Executive control of cognitive processes in task switching," *Journal of Experimental Psychology - Human Perception and Performance*, 27 (4), 736-797.
- Sanderson, K.R. (2012). Time orientation in organizations: Polychronicity and multitasking. *FIU Electronic Theses and Dissertations*. Paper 738. <http://digitalcommons.fiu.edu/etd/738>
- Schieman, S. & Young, M. (2010). Is there a downside to schedule control for the work-family interface? *Journal of Family Issues*, 31(10), 1391-1414.
- Shockley, K. & Singla, N. (2011). Reconsidering work-family interactions and satisfaction: A meta-analysis. *Journal of Management*, 37, 861-886. DOI:10.1177/0149206310394864.
- Steenkamp, J-B. & Baumgartner, H. (1998). Assessing measurement invariance in cross-national consumer research. *Journal of Consumer Research*, 25, 78-90.
- Voydanoff, P. (2005). Consequences of boundary-spanning demands and resources for work-to-family conflict and perceived stress. *Journal of Occupational Health Psychology*, 10(4), 491-503.
- Westman, M., Hobfoll, S.E., Chen, S., Davidson, O.B., & Laski, B. (2004). Organizational stress through the lens of conservation of resources (COR) theory (pp. 167 – 220). In P. L. Perrewe and D.C. Ganster (Eds.) *Interpersonal dynamics (Research in occupational stress and well-being, Volume 4)*. Emerald Group Publishing Limited.