



THE RECIPROCAL RELATIONS OF PRESSURE, WORK/FAMILY INTERFERENCE, AND ROLE SATISFACTION: EVIDENCE FROM A LONGITUDINAL STUDY IN TAIWAN

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The aim of this longitudinal study was to explore reciprocal relationships between work/family pressure, work/family interference, and work/family satisfaction among Taiwanese employees (N = 310). All study variables were assessed three times. We found that within the work domain, earlier work pressure caused later work-to-family conflict (WFC), while earlier WFC reduced later job satisfaction. We also found that earlier WFC caused later work pressure, while earlier job satisfaction reduced later WFC. Similarly, we found that within the family domain, earlier family pressure caused later family-to-work conflict (FWC), while earlier FWC reduced later family satisfaction. We also found that earlier FWC caused later family pressure. In addition, family pressure and family satisfaction had reciprocal relationships over time. Together these longitudinal and reciprocal relations strongly support our hypothesized feedback loops linking pressure, work and family conflict, and role satisfaction, within each of the work and family domains. We made specific suggestions on breaking these vicious cycles to effectively manage both the work and family roles.

Keywords: work/family interference; work pressure; family pressure; work satisfaction; family satisfaction

The potential impact that work and family issues have on employees, family members, and organizations has caused a rising interest among researchers based in the developed Western countries. For instance, it has been found that the more time a person spends on

the job, the more interference there is between work and family (work/family interference, or WFI) (Bruck, Allen, & Spector, 2002). It is also argued that work and family issues are at least as important to organizational functioning as family functioning (Barnett, 1998). Much of the research on these issues

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has been conducted with an occupational stress perspective, focusing on antecedents of WFI such as working hours and work-role overload, and on effects of WFI on strains and well-being both at work and at home. A clear connection between work/family antecedents and WFI as well as one between WFI and strains has now been established (e.g., Allen, Herst, Bruck, & Sutton, 2000; Byron, 2005; Michel, Kotrba, Mitchelson, Clark, & Baltes, 2011). In other words, WFI has now been considered as a *mediator* in the stressor-strain relation, particularly between work and fam-

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ily stressors (e.g., work and family demands) and impaired well-being, including dampened role satisfaction and inflated physical and psychological symptoms. However, such a theoretical view of WFI has largely been based on studies with cross-sectional designs. Such a research design makes it impossible to draw strong inferences about the causes and consequences of WFI. Even though we found in a cross-sectional study that work overload, WFI, and lowered job satisfaction were positively correlated, we could still consider WFI as a *stressor* (e.g., WFI leads to lowered work efficiency and an accumulation of work de-

mands) or as a *strain* (e.g., WFI and depressive symptoms are both direct consequences of work overload). There have been calls for longitudinal designs in the work-family studies (Lambert, 2006; Muse & Lambert, 2010).

The primary aim of the present three-wave panel study is to provide in-depth knowledge about the processes through which WFI arises and affects employees' role satisfaction. Such an effort can remedy the methodological limitation caused by the scarcity of longitudinal data in the existing work and family literature, which should provide a stronger basis for causality inferences than cross-sectional data. We intend to build upon existing cross-domain research by focusing on mapping out two sets of reciprocal relations of pressure, interference, and role satisfaction within each of the work and family domains.

A secondary aim of our present study is to examine the extent to which existing Western findings can be generalized to a Chinese population. This is due to the fact that the vast majority of studies concerning work- and family-related concepts have been done in the United States and other Western countries. Thus, a major limitation in this literature is its decidedly Western focus. In the developing societies such as Taiwan, work and family issues are only beginning to gain attention. Taiwan in recent decades has undergone fundamental transformations of industrial structures from labor-intensive to high-tech, as well as rapid social modernization in both work and life styles. Consequently, Taiwanese employees are becoming more exposed than ever to stressful Western and industrialized work situations (L. Lu, 1997). Furthermore, with the rising proportion of females in the workforce (nearly 50 percent in 2009), more and more Taiwanese employees are now caught between the demands of work and family (Hsu, Chou, & Wu, 2001; L. Lu, Huang, & Kao, 2005; L. Lu, Kao, Chang, Wu, & Cooper, 2008), especially as family life is traditionally highly valued in a Chinese society (Lee, 1988). Although there have been a few longitudinal studies conducted in the West (e.g., Demerouti, Bakker, & Bulters, 2004; Leiter & Durup, 1996), none have been done with Chinese employees. Several recent cross-cultural studies contrasting the Chinese against their Western counterparts have already revealed significant differences in WFI experiences. For instance, L. Lu, Gilmour, Kao, and Huang (2006) found that the relationship between workload and WFI was stronger for British than Taiwanese employees. Later, researchers also found that the relationship between WFI and role satisfaction was stronger for British than Taiwanese employees (L. Lu, Cooper, Kao, Chang, Allen, Lapierre, . . . Spector, 2010). Findings from a large international collaboration project corroborate these patterns (Spector et al., 2007). Thus, the thrust of the present study was to use a *longitudinal design* to systematically examine some presumed antecedents and consequences of WFI over time within both work and family domains, in a sample of cultural Chinese in

Taiwan. Specifically, we intend to test whether workload, WFI, and job satisfaction formed a feedback circle over time in the work domain, while family conflict, WFI, and family satisfaction formed another feedback circle over time in the family domain for the Chinese people. Such a longitudinal design balanced for the work and the family domains is rare, especially with non-Western participants.

WFI: The Classical Stress Perspective

Work and family conflict is by far the most popular WFI construct being studied within the occupational stress paradigm (Allen et al., 2000; Byron, 2005; Frone, Russell, & Cooper, 1992; Michel et al., 2011). It is defined as “a form of inter-role conflict in which the role pressures from the work and family domains are mutually incompatible in some respects” (Greenhaus & Beutell, 1985, p. 77). More recently, researchers have begun to recognize the duality of work and family conflict by considering both directions—work interfering with family and family interfering with work (Carlson, Kacmar, & Williams, 2000; Frone, 2003; Frone et al., 1992)—and it has been asserted that the two forms of WFI are discernible with unique antecedents, and both need to be examined (Byron, 2005).

In the present study, we conceptualize work-to-family conflict (WFC) as conflict due to work interfering with family and family-to-work conflict (FWC) as conflict due to family interfering with work. Both WFC and FWC are inter-role conflicts on the work/family interface; the distinction lies in the direction or the cause and effect of the conflict. So conceptualized, WFC and FWC result from work and family responsibilities that make emotional and physical demands and compete with each other for limited personal resources. The present study focused on experiences of WFC and FWC of Chinese employees over time and within each domain.

From an occupational stress perspective, the Effort-Recovery (E-R) model (Meijman & Mulder, 1998) has been developed to explain the stressor → WFI → strain sequence. The main proposition is that employees need adequate rest after exertion of efforts at

work to recover and recharge both physically and psychologically. Failing to gain sufficient recovery will result in a depletion of psychic energy that will force individuals to increase their efforts to cope with subsequent work demands and further lead to prolonged strain. Applying this theory in the context of WFI, we can infer that when pressure from work or family exceeds the individual's capacity to cope, work and family demands come into conflict, thus depriving the individual adequate chances of recovery from performing either the work or family role, resulting in dampened role satisfaction as well as increased perception of role pressure. The scarcity hypothesis (Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1964) also purports that we possess limited resources such as time and energy, and performing multiple roles thus inevitably will lead to resource competition and conflict. Work overload is likely to lead to working overtime and leave the individual exhausted and strained (Karasek & Theorell, 1990; L. Lu et al., 2005), and thus unable to take on family duties after work, resulting in WFC and dampened work-role satisfaction. Similarly, heightened disagreement among family members requires extensive time and efforts to resolve the conflict (Kao & Lu, 2006), and such a deprivation of time and emotional energy will likely result in FWC and dampened family-role satisfaction. Thus, to fully understand the impact of WFC and FWC on employees, pressure from work and family domains such as workload and family conflict need to be examined.

Although there have been arguments and supporting evidence that workload may be categorized as a challenge stressor in contrast to hindrance stressors such as work-role conflict (LePine, Podsakoff, & LePine, 2005; Podsakoff, LePine, & LePine, 2007). The former may be beneficial and the latter harmful to job satisfaction, while both are damaging for personal well-being (LePine et al., 2005; Podsakoff et al., 2007). There

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have been very few studies that examined the specific relationship between workload and job satisfaction among Chinese workers (although not exhaustive, a search through PsycINFO and PsycARTICLES yielded only two results). C. Q. Lu, Siu, Au, and Leung (2009) found a positive relation between factors intrinsic to the job and job satisfaction among Chinese workers in private-owned enterprises, but a nonsignificant one for those in state-owned enterprises. They used only two items to measure factors intrinsic to the job: working very long hours and keeping abreast of new techniques or challenges, which they argued as challenge stressors. In addition to this measurement inconsistency

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of workload (most Western studies used standardized multiple-item scales), L. Lu and her associates also acknowledged that Chinese employees in the private sector nowadays often have to take more quantitative work or work overtime to get more salary because a performance-driven reward system has been widely implemented in private enterprises. As a result, the benefit of salary may surpass the harmfulness of stressors, and future studies need to control for employees' salary in the regression equations. Other studies in the Chinese work context suggest that workload may still have more noxious than beneficial effects on employees. For instance, contrary to what was found in Western studies and the aforementioned study conducted in mainland China, multiple samples of Chinese workers from mainland China, Taiwan, and Hong Kong reported that workload was one of the most salient stressors,

and its level was negatively associated with job satisfaction, turnover intention, and personal well-being (K. C. Chang & Lu, 2007; L. Lu, Kao, Siu, & Lu, 2010; L. Lu, Kao, Zhou, & Siu, 2001). Recent empirical evidence suggests that for Chinese workers, the positive effects of workload as a challenge stressor

were confined to enhancing actual job performance (T. T. Chang, Lu, & Huang, 2011; L. Lu, Chang, & Lai, 2011; L. Lu, Kao, Siu, and Lu, 2010) and increasing individual-oriented organizational citizen behavior—that is, helping teammates to accomplish work tasks (T. T. Chang et al., 2011). Tentatively it seems that workload may have a dual role in the stress process for Chinese workers; it may push them to get more work done, but it may still depress their job satisfaction and create greater strains.

Back to the WFI context, physical and psychic exertions associated with work overload are related to the time and strain bases of WFI. A meta-analytic review (Byron, 2005) summarizing findings from over 60 published studies confirmed that both work and family demands, especially work and family pressure, were consistently related to WFC and FWC, respectively. For instance, heavy workload is indeed a direct precursor of WFC in the West (Frone, 2003) and in Taiwan (L. Lu et al., 2005, 2006, 2008). A most recent meta-analysis (Michel et al., 2011) further established that work-role stressors, work-role involvement, work social support, work characteristics, and personality are antecedents of WFC, while family-role stressors, family social support, family characteristics, and personality are antecedents of FWC. Among the significant relations found in the work domain, work-role overload had the largest relationship with WFC ($\rho = .55$). Michel et al. (2011) defined work-role overload as “the perception of having too many work-role tasks and not enough time to do them” (p. 693), which is nicely captured by the Quantitative Workload Inventory (QWI) developed by Spector and Jex (1998). Thus, we will use workload measured by QWI as an indicator of work pressure in the present study. To avoid confusion, workload will herein be used in this article to represent the conceptualization noted earlier.

There has also been a vast literature supporting a linkage between various forms of work pressure and work attitudes, such as a negative relation between workload and job satisfaction for Western workers (reviewed by Cooper, Dewe, & O'Driscoll, 2001) and Chinese workers (reviewed by L. Lu, 1997;

L. Lu et al., 2001; L. Lu, Kao, Siu, & Lu, 2010). We thus hypothesized:

Hypothesis 1: Work pressure (workload) would be positively related to WFC and negatively related to job satisfaction. In addition, WFC would be negatively related to job satisfaction.

Parallel in the family domain, family demands have also been identified as antecedents of FWC in the West (Frone et al., 1992) and in Taiwan (L. Lu et al., 2005, 2008). In Byron's (2005) meta-analysis, family conflict was strongly related to FWC ($\rho = .32$). In Michel et al.'s (2011) more recent review, a pooled family-role stressor index had the largest relationship with FWC ($\rho = .40$). While most existing studies used objective measures (e.g., counting the number of young children, recording the spouses' employment status) to index family responsibility, we believed that only when these family characteristics were perceived as "demands" would they then be related to WFI. Family conflict has been reported as a major source of family pressure and highly demanding for Taiwanese couples (Kao & Lu, 2006). In Byron's (2005) meta-analysis, family conflict encompassed marital conflict, parental conflict, marital tension, relationship agreement, and marital anger, which substantially overlaps with our conceptualization and measurement of family conflict as disagreement among family members due to lack of congruence on important aspects of family life (Kao & Lu, 2006). We thus attempted to capture the psychological reality of family pressure by assessing the level of family conflict, which is not often done in WFI research (Michel et al., 2011).

Ample evidence in the family and marriage field has already established a firm link between family pressure and family adaptation (Locke & Wallace, 1959; Thornes & Collard, 1979). A recent longitudinal study in Taiwan revealed that parental stress had negative effects on mental health and marital satisfaction, and these relationships were robust over time and for both men and women (L. Lu, 2006). Another Taiwanese study also found that marital conflict regarding

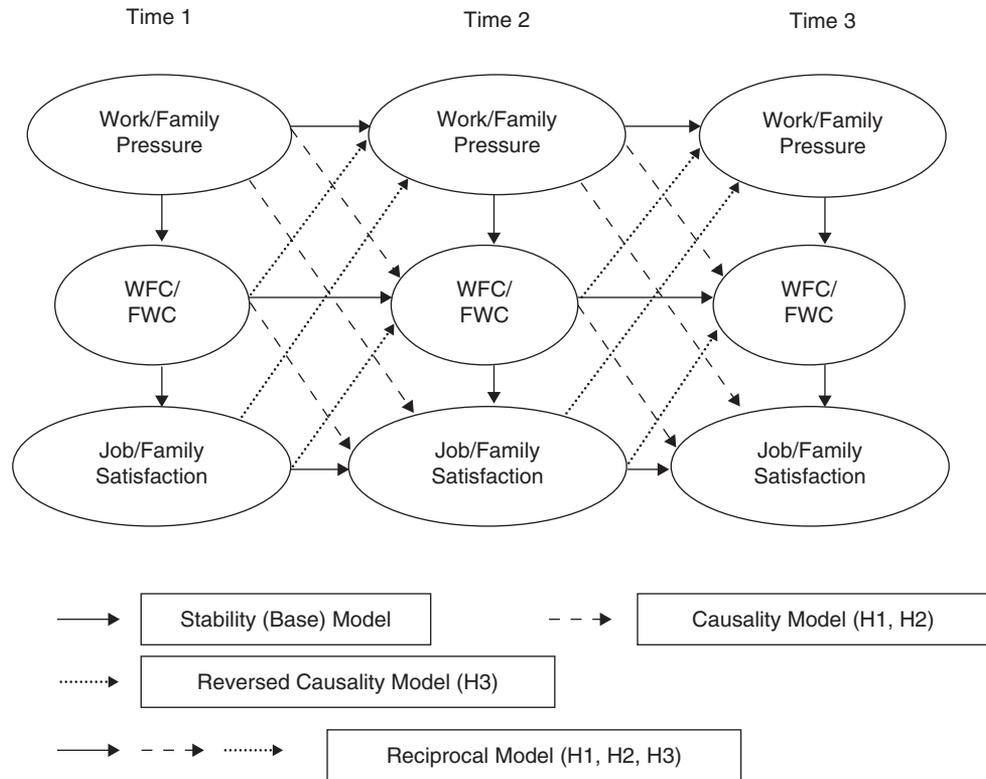
important issues in family life was related to couple adjustment (Kao & Lu, 2006). As a whole, existing research has established connections between family demands and FWC, and FWC and strains. However, we still do not know anything about causality. We thus hypothesized:

Hypothesis 2: Family pressure (family conflict) would be positively related to FWC and negatively related to family satisfaction. In addition, FWC would be negatively related to family satisfaction.

To aid understanding of our hypotheses, Figure 1 gives an abridged graphic representation of various underlying models. Solid arrows depict the *Stability Model*, including temporal stabilities (termed "autocorrelation model" in Leiter & Durup, 1996) and synchronous correlations but excluding any cross-lagged relations between focal constructs. This will be used later as a base for model comparisons. Adding to the base model, dashed arrows depict the *Causality Model* (H1 and H2), including cross-lagged relations leading from work/family pressure to subsequent WFC/FWC and role satisfaction, as well as those from WFC/FWC to subsequent role satisfaction. Also adding to the base model, dotted arrows depict the *Reversed Causality Model* (H3, to be described later), including cross-lagged relations leading from WFC/FWC and role satisfaction to subsequent work/family pressure, as well as those from role satisfaction to subsequent WFC/FWC. Finally, the *Reciprocal Model* (H1, H2, and H3) includes all the relations depicted in Figure 1. For a clearer graphic representation, all relations between the construct measured at T1 and those measured at T3 are omitted.

WFI: Alternative Perspectives

Taken together, H1 and H2 come close to representing the classical *causality view*, which seems to be the consensus in the present work and family literature. That is, stressors cause WFI, and WFI in turn raises strains. Most of the supportive evidence for this model comes from cross-sectional studies though, as reviewed earlier. In addition to theories such as



Note: Hypothesized relations between constructs measured at T1 and T3 in all models are omitted in the figure to achieve a clearer graphic representation.

FIGURE 1. An Abridged Representation of the Stability Model, Causality Model, Reversed Causality Model, and Reciprocal Model of Pressure, Work/Family Interference, and Role Satisfaction

the Effort-Recovery (E-R) model and the Scarcity Hypothesis, which may explain the stressor → WFI → strain sequence, there are other equally viable theoretical explanations leading us to expect opposite pathways. For instance, the “drift hypothesis” (Kohn & Schooler, 1983) in health research suggests that individuals with bad health drift to lower social statuses, which also go along with lower-paid and more stressful jobs. Collaborating this view, Jamal (1986) pointed out that those who work the night shift (moonlighters) are generally economically squeezed and socially deprived, and so resort to working at more taxing night jobs. Using these findings in the health literature as an analogy, we can reason that dampened role satisfaction or problems of WFI may hamper people’s role performance and push them to

jobs with less security and/or create more family frictions and instability, which may lead to greater role pressure. Also, those employees who are under strain or experiencing WFI may be more easily distracted from work and family duties, thus eventually creating an increasing backlog of workload and elevated family discord. A qualitative and quantitative literature review conducted by Judge, Thoresen, Bono, and Patton (2001) firmly established a significant relation between job satisfaction and job performance. It is thus probable that less satisfied employees tend to perform poorly or less efficiently at work, which puts them under even greater pressure due to the accumulation of tasks and disapproval of supervisors.

In the WFI literature, we locate three studies providing partial evidence for the reversed

causality hypothesis. One longitudinal study found that previous WFC was a causal determinant of later work pressure (Demerouti et al., 2004). However, this study used a sample from one single organization and focused only on WFC, excluding FWC. Another six-month follow-up study by Kelloway, Gottlieb, and Barham (1999) also showed that WFC was an outcome of strain (measured as feelings of being under stress). Unfortunately, this study again used restricted samples (employees of a health care and a retail grocery organization). Finally, Leiter and Durup (1996) in a two-wave cross-lagged study revealed that WFC had *reciprocal* longitudinal relations with emotional exhaustion and marital satisfaction. Among other things, WFC did predict later work overload. This study also focused only on work exhaustion, not generic work-role satisfaction. A common shortcoming of the three studies is the neglect of the FWC process, illuminating only the one-way effect (WFC) of WFI. We thus seek to remedy this neglect by considering the dual direction of WFI in the present longitudinal study. We hypothesized:

Hypothesis 3a: Role satisfaction (work and family satisfaction) would have a lagged negative effect on WFC and FWC.

Hypothesis 3b: Role satisfaction would have a lagged negative effect on work and family pressure, while WFC and FWC would have lagged positive effects on work and family pressure.

Taken together, our H1, H2, and H3 come close to representing a dynamic view of *reciprocal relations* among work and family pressure, WFI, and role satisfaction. Headey and Wearing (1989) formulated a dynamic equilibrium model of well-being, stating that people's personality traits had a top-down effect on their states of well-being, which in turn would lead them to encounter different life situations. This dynamic process in effect keeps one's well-being at a relatively stable level for an extended period of time (L. Lu, 1999; Veenhoven, 1994). In other words, it is more likely that the person (i.e., personality, health, coping) constantly interacts with

the environment (i.e., events, stressors) in a recursive circle rather than in a static fashion (Lazarus & Folkman, 1984). Applied to our study, this dynamic process goes as follows: work and family pressure evokes feelings of work interfering with family and family interfering with work, and depresses work satisfaction and family satisfaction. These feelings of dissatisfaction will subsequently give rise to more work and family pressure and WFI. Such a dynamic view of reciprocal relations can only be modeled with longitudinal data.

Method

Procedure and Participants

The participants in our study were full-time employees working in different organizations of diverse industries across Taiwan. We employed a longitudinal design in which all variables were measured three times, with six months in between the waves. Previous studies have adopted intervals of six weeks to six months and generally found WFC to be quite stable for such a time lag, with autocorrelation of .46–.83 (Demerouti et al., 2004; Kelloway et al., 1999; Leiter & Durup, 1996). We thus chose the time lag of six months both to allow sufficient fluctuation over time (providing sufficient variance) and to extend the existing research boundary to cover a longer time period (our longest interval is one year).

Data were collected from multiple companies to represent as wide a variety of sectors/organizations/positions as possible. A variety of recruitment methods were used. For example, some participants were those enrolled in executive education programs who were recruited in classes (65.9 percent of the final sample), some were recruited through personal contacts (22.7 percent of the final sample), and some were invited to participate through personnel managers in various organizations (11.4 percent of the final sample).

Work and family pressure evokes feelings of work interfering with family and family interfering with work, and depresses work satisfaction and family satisfaction.

All participants were approached three times, six months apart. We expected that this time interval would be long enough to allow sufficient variance in the model variables regardless of idiosyncratic organizational circumstances.

At Time 1 (T1), along with the first questionnaire, each participant received a cover letter informing them of the purpose of the study and the commitment required, and assuring them of anonymity and confidentiality. Participants completed structured questionnaires in their leisure and returned them in sealed envelopes either to researchers or to their contact persons. Response rates were 100 percent, 96 percent, and 91 percent at three waves, respectively. At the end of the study period, 310 participants had data for all three times (overall retention rate of 91 percent). We conducted clear briefings and obtained a strong commitment from our contact persons. In addition, sending out repeated reminders and providing a gift for rewarding participants staying in the study may have all contributed to such a high retention rate.

As response rates at each wave and the overall retention rate are high in the present study, selection bias caused by attrition is not likely a major problem. Nonetheless, as a precaution, we systematically examined differences between employees in the panel sample and the dropouts with regard to demographic characteristics as well as the mean scores on the study variables. Analyses revealed *no* significant differences whatsoever. We thus concluded that no serious selection problems due to panel loss had occurred.

The sample was 50.2 percent male and 49.8 percent female, with a mean age of 36.87 (SD = 10.85, range = 19–64) and mean job tenure of 9.51 years (SD = 9.08). Just over half of the sample (50.9 percent) was married. Among those who were married, 84.5 percent had children. Mean years of formal education was 15.81 (roughly equivalent to three more years after high school, SD = 2.01). Over a quarter of the respondents (28.8 percent) were managers at various levels. More people worked in manufacturing (20.2 percent), the service industry (16.2 percent), and culture and education (15.9 percent) than other

occupations. No respondents changed their jobs or marital status during the study period.

Measures

The survey was administered in Chinese, and all the Chinese-version scales have been used in previous studies with satisfactory reliability and validity. These references will be given along with the original English version when every scale is introduced below.

Work Pressure

Quantitative workload was used to indicate work pressure. Five statements from the Quantitative Workload Inventory (Spector & Jex, 1998) were listed describing quantitative aspects of work demands (e.g., “How often is there a great deal to be done?”). Five-point rating scales were used to measure how often these conditions applied to participants’ work (1 = never, 5 = always). A higher score represented higher levels of workload. The Chinese version of the QWI was used in Lu, Siu, and Lu’s study (2010) with good psychometric property. The overall internal consistency of the QWI across three waves was .86 in the current sample. The single reliability α for each variable for each time is presented on the diagonal of Table I.

Family Pressure

Family conflict was used to indicate family pressure. The Family Conflict Scale (FCS; Kao & Lu, 2006) measures the extent of conflict caused by disagreement in major aspects of Chinese families (e.g., “How often is there a disagreement regarding childrearing in your family?”). Since nearly half of our sample was not married, we omitted this “childrearing” item to avoid threats to construct validity and measurement bias. The four items we used from FCS pertain to filial piety, household chores, communication/expression, and friends/social relationships. Previous research in Taiwan has demonstrated that both married and non-married people could relate to these aspects of family life, albeit they may use different reference points to draw on their

T A B L E I Means, Standard Deviations (SD), Cronbach's α (on the Diagonal), and Correlations for the Study Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
1. Workload 1	.82																		
2. Workload 2	.64***	.85																	
3. Workload 3	.60***	.69***	.87																
4. WFC 1	.45***	.47***	.44***	.93															
5. WFC 2	.40***	.52***	.46***	.70***	.94														
6. WFC 3	.42***	.53***	.56***	.69***	.73***	.95													
7. Job satisfaction 1	-.23***	-.15*	-.20**	-.13*	-.18**	-.20**	.79												
8. Job satisfaction 2	-.26***	-.25***	-.24***	-.23***	-.27***	-.28***	.62***	.80											
9. Job satisfaction 3	-.20**	-.17*	-.29***	-.22**	-.22**	-.31***	.55***	.62***	.80										
10. Family conflict 1	.16*	.17*	.17*	.25***	.32***	.27***	-.21**	-.19*	-.28***	.86									
11. Family conflict 2	.08	.07	.12	.20**	.33***	.19***	-.18*	-.16*	-.19*	.55***	.87								
12. Family conflict 3	.12	.13	.18*	.23***	.29***	.26***	-.18*	-.17*	-.16*	.56***	.54***	.88							
13. FWC 1	.27***	.28***	.32***	.57***	.45***	.48***	-.15*	-.18**	-.19**	.35***	.28***	.29***	.91						
14. FWC 2	.13*	.19**	.17**	.40***	.63***	.38***	-.18**	-.13*	-.11	.28***	.34***	.31***	.61***	.91					
15. FWC 3	.16*	.17**	.25***	.40***	.40***	.59***	-.11	-.14*	-.20**	.31***	.26***	.29***	.67***	.53***	.92				
16. Family satisfaction 1	-.02	-.03	-.05	-.03	-.06	-.11	.37***	.22**	.26***	-.42	-.21**	-.24***	-.23***	-.15*	-.17**	.97			
17. Family satisfaction 2	-.06	-.01	-.11	-.06	-.09	-.13*	.17**	.36***	.20**	-.35	-.15*	-.21**	-.29***	-.14*	-.21**	.58***	.97		
18. Family satisfaction 3	-.11	-.09	-.07	-.15*	-.19**	-.19**	.20**	.26***	.44***	-.45	-.33***	-.33***	-.29***	-.22**	-.24***	.56***	.54***	.96	
Mean	3.61	3.53	3.47	2.56	2.50	2.47	3.58	3.54	3.64	1.99	2.03	2.06	2.12	2.14	2.07	4.02	3.98	4.04	
SD	0.65	0.63	0.67	0.84	0.82	0.81	0.79	0.75	0.73	0.68	0.68	0.69	0.70	0.67	0.60	0.86	0.84	0.79	

Notes: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

own “family” experiences (T. T. Chang & Lu, 2009). Five-point rating scales were used to measure how often these conditions applied to participants’ family life (1 = never, 5 = always). Thus, a higher score represented a higher level of family conflict. This scale was originally developed in Chinese. The overall internal consistency of the FCS was .86 in the current sample. This variable also had an average correlation coefficient of .43 (across three time points) with a one-item measure of overall perceived family stress (which is not included in this article), indicating some degree of convergence with the family pressure construct.

WFC and FWC

To correspond to our dual-direction conceptualization of WFI, the Work-Family Conflict Scale (WFCS; Netemeyer, Boles, & McMurrian, 1996) was used to assess WFC and FWC separately. Sample items are: “The amount of time my job takes up makes it difficult to fulfill family responsibilities” (WFC) and “I have to put off doing things at work because of demands on my time at home” (FWC). Five-point rating scales were used (1 = completely disagree, 5 = completely agree), with higher scores representing high levels of WFC and FWC. The Chinese version of WFCS was recently used in T. T. Chang, Lu, and Kuo’s study (2012) with acceptable validity. The overall internal consistency of the WFC scale was .94 and that of the FWC scale was .91 in the current sample.

Role Satisfaction

Both work and family outcomes were measured. Three items from the Michigan Organizational Assessment Questionnaire (Cammann, Fichman, Jenkins, & Klesh, 1979) were used to assess *job satisfaction*: “In general, I like working here,” “All in all, I am satisfied with my job,” and “In general, I don’t like my job” (reverse-scored). Participants were asked to rate their *family satisfaction* on three items: “My family life is very enjoyable,” “All in all, the family life I have is great,” and “In general, I am satisfied with my

family life” (Edwards & Rothbard, 1999). Five-point rating scales were used for both satisfaction measures (1 = disagree very much, 5 = agree very much), with higher scores representing higher levels of job satisfaction and family satisfaction. The Chinese versions of these two scales were used for the Chinese sample included in Spector et al.’s international study (2007). The overall internal consistency of the job-satisfaction scale was .80 and that of the family satisfaction scale was .97 in the current sample.

In addition, information on sex (coded male = 0, female = 1), age, marital status (coded married = 1, never married = 0), education attainment, tenure on the job, and rank (coded managers = 1, employees = 0) were recorded. These were intended as control variables.

Confirmatory Factor Analysis

We conducted confirmatory factor analysis (CFA) to test for convergent and divergent validity of each variable at each wave. As results were very similar across three times, below we will report those based on T1 data. There were six research variables (constructs) in the present study: workload, family conflict, WFC, FWC, job satisfaction, and family satisfaction. CFA revealed that all scale items loaded significantly ($p < .001$, all loadings $> .50$) on their designated construct, indicating acceptable individual item reliability. The composite reliability (CR) is an indicator of the internal consistency of a construct. In the present study, CR for the six constructs ranged from .81 to .97, indicating acceptable internal consistency of all constructs. Finally, the average variances extracted (AVE) represents the percentage of variances in a latent construct can be explained by its indicators (observed variables). In the present study, AVE for the six constructs ranged from .50 to .92, indicating acceptable convergence of observed indicators to their designated constructs. According to Hair, Black, Babin, Anderson, and Tatham (1998), convergent validity may be established when (1) all individual items loaded significantly on their constructs, (2) CR is greater than .7, and (3) AVE is greater than .5.

All six constructs in our study thus demonstrated good convergent validity.

Discriminant validity may be established when relations between different constructs are weaker than those within each construct (Hair et al., 1998). In other words, when examining a correlation matrix (see Table I), the square root of AVE should be greater than all correlation coefficients involving the construct. In our study, the square root of AVE was .70, .71, .86, .81, .78, and .96 for workload, family conflict, WFC, FWC, job satisfaction, and family satisfaction, respectively, greater than all correlation coefficients involving each of the construct. Thus, the discriminant validity was acceptable for all of our constructs.

Results

Temporal Stability

Prior to the model testing, the means, standard deviations, and bivariate correlations (including auto-correlations) were computed for all study variables (see Table I). As can be seen from the table, all variables had auto-correlations of at least .53. The highest average auto-correlation was for WFC (.71), followed by workload (.64), job satisfaction and FWC (.60), family satisfaction (.56), and, finally, family conflict (.54). This means that WFC/FWC and their correlates are quite stable experiences.

It is worth noting that none of the demographic variables was systematically related to the model variables (not shown in the tables). Thus, to facilitate model estimation, the demographics were excluded from all further analyses.

Hypothesis Testing

There has been evidence in the West supporting cross-domain effects in WFI. A meta-analysis that examined cross-domain relations among work and family satisfaction and conflict found that stressors and sources of support specific to the work and the family domain are related to satisfaction outside of

those domains (Ford, Heinen, & Langkamer, 2007). Namely, work stress was related to family satisfaction, while family stress was related to job satisfaction. Similar cross-domain effects have been reported with non-Western samples too (Aryee, Fields, & Luk, 1999; L. Lu et al., 2005). However, pertaining to relations among work and family antecedents and WFI, meta-analytic evidence still supports that work-related antecedents have a stronger influence on WFC than FWC, whereas family-related antecedents have a stronger influence on FWC than WFC (Byron, 2005; Michel et al., 2011).

Although most of the existing research adopted cross-sectional designs, and thus is less compelling in causal inferences, one longitudinal study (Leiter & Durup, 1996) did provide strong evidence of spillover relationships from the work to home domain, and to a lesser extent, evidence of spillover relationships from the home to work domain. However, the fine-grained flow of pressure (stressors), conflict, and satisfaction within each of the work and home domain has been overlooked so far. Demerouti et al. (2004) worked out an interesting flow among work pressure, WFC, and exhaustion across three waves in time. Unfortunately, they did not include any variables in the family domain. We thus seek to go beyond Demerouti et al.'s work, by focusing on mapping out intricate flows among work pressure, WFC, and job satisfaction, as well as those among family pressure, FWC, and family satisfaction. Our three-wave panel data were uniquely suitable for such an exploration of temporal process, and such a model testing exercise would directly address our hypotheses of causal directions.

It may be worth pointing out that in our study, the within-domain relations were very consistent (see Table I)—namely, workload had positive relations with WFC, which

Pertaining to relations among work and family antecedents and WFI, meta-analytic evidence still supports that work-related antecedents have a stronger influence on WFC than FWC, whereas family-related antecedents have a stronger influence on FWC than WFC.

TABLE II Goodness-of-Fit Indices for the Alternative WFC Models ($N = 310$)

Model	χ^2	<i>df</i>	<i>p</i>	GFI	CFI	RMSEA
M1, Stability (Base) Model (Workload)	87.65	442	.001	.93	.92	.16
M2, Causality Model (WL → WFC/JS, WFC → JS)	54.57	437	.001	.95	.94	.12
M3, Reversed Causality Model (JS → WFC/WL, WFC → WL)	21.76	433	.01	.98	.98	.08
M4, Reciprocal Model (M2 + M3)	10.28	428	.05	.99	.99	.05

Notes: WL = workload; WFC = work-to-family conflict; JS = job satisfaction.

in turn had negative relations with job satisfaction; and family conflict had positive relations with FWC, which in turn had negative relations with family satisfaction. However, cross-domain relations were less consistent (see Table I). Workload indeed had positive relations with FWC, while family conflict had positive relations with WFC. Evidence is lacking for consistent relations between workload and family satisfaction, and those between WFC and family satisfaction and FWC and job satisfaction. The family conflict and job satisfaction relations were the only consistent set of relations across domains.

Our panel data were thus analyzed with structural equation modeling (SEM) techniques using the AMOS computer program. Separate models were tested for WFC and FWC, confining to paths linking within domain variables at one time point and across different time points. Thus, two sets of SEM models were compared (see Tables II and III).

Following Demerouti et al.'s (2004) procedure for analyzing cross-lagged data, four competing models were fitted to the data in each set by means of a cross-lagged structural equation model (see Figure 1 for model specification). First of all, a base model (Stability Model) was specified, shown as solid arrows in Figure 1. This model estimates, therefore, the total stability coefficient between waves 1 and 2, waves 2 and 3, and waves 1 and 3, without decomposing the variance into constituent paths (direct and indirect effects) (Pitts, West, & Tein, 1996). Second, this stability model was compared with three more complex models that were nearest in likelihood to the hypothesized structural model:

- The Causality Model is identical to the Stability Model but also includes cross-lagged structural paths, shown as dashed arrows in Figure 1. This represents the classical view of WFI (our H1 and H2).
- The Reversed Causality Model is identical to the Stability Model but also includes cross-lagged structural paths, shown as dotted arrows in Figure 1. This represents an alternative view of WFI (our H3).
- The Reciprocal Model includes all paths of the Causality Model and Reversed Causality Model. This represents yet another alternative view of WFI (our H1, H2, and H3 together). All paths between the construct measured at T1 and those measured at T3 omitted in Figure 1 were included in model testing.

The various nested models were compared by means of the χ^2 difference test. Model evaluation is usually not a simple procedure, and no single descriptive index seems to be superior to the others and impeccable in this regard (Bentler, 1990; Hoyle, 1995). Basically, evaluating a model is to strike a balance between simplicity and complexity (reflected in the parsimony indices) and good fit and poor fit (reflected in the fit indices). Thus, in addition to the χ^2 statistic, we also assessed the goodness-of-fit index (GFI), the χ^2/df ratio, and the root mean square error of approximation (RMSEA). Furthermore, AMOS provides the comparative fit index (CFI) that reflects the discrepancy between the hypothesized model and the baseline, null model. The CFI is relatively robust across sample size compared to the χ^2 statistic and other

TABLE III Goodness-of-Fit Indices for the Alternative FWC Models ($N = 310$)

Model	χ^2	<i>df</i>	<i>p</i>	GFI	CFI	RMSEA
M1, Stability (Base) Model (Family Conflict)	120.58	442	.001	.91	.88	.21
M2, Causality Model (FC \rightarrow FWC/FS, FWC \rightarrow FS)	94.18	437	.001	.93	.90	.17
M3, Reversed Causality Model (FS \rightarrow FWC/FC, FWC \rightarrow FC)	70.16	433	.001	.94	.93	.16
M4, Reciprocal Model (M2 + M3)	33.80	428	.01	.99	.97	.06

Notes: FC = family conflict; FWC = family-to-work conflict; FS = family satisfaction.

fit indices (Bentler, 1990). In general, models with fit indices (both GFI and CFI) $> .90$ and RMSEA $< .08$ indicate a good fit (Hoyle, 1995). Moreover, our combination of fit indices is consistent with previous research using a cross-lagged design (Demerouti et al., 2004).

Tables II and III display the overall fit indices of competing models of WFC and FWC, respectively. In general, the WFC models indicate a better fit than that of the FWC models, since the former set has fit indices equal to or higher than .90 and the ratio between the χ^2 statistic and the number of degrees of freedom is relatively low. We will now focus on model comparisons.

For the WFC models using workload as an indicator of work pressure (see M1 to M4 in Table III), M2 was different from M1 ($\Delta\chi^2 = 33.08$, $df = 5$, $p < .001$), suggesting that the causality model was superior to the stability model. M3 also proved superior to M1 ($\Delta\chi^2 = 65.89$, $df = 9$, $p < .001$), suggesting that the inclusion of cross-lagged paths representing reversed causality is substantial. M4 ($\Delta\chi^2 = 77.37$, $df = 14$, $p < .001$) also proved superior to M1, suggesting that the inclusion of reciprocal cross-lagged paths is a significant improvement. Finally, when M3 was compared against M4, the delta χ^2 test was significant ($\Delta\chi^2 = 11.48$, $df = 5$, $p < .05$). Cross-lagged *reciprocal* relationships between work pressure, WFC, and job satisfaction fit the data the best.

For the set of FWC models using family conflict as an indicator of family pressure (see M1 to M4 in Table III), M2 was superior to M1 ($\Delta\chi^2 = 26.40$, $df = 5$, $p < .01$), suggesting that the inclusion of cross-lagged paths

representing causality is substantial. M3 ($\Delta\chi^2 = 50.42$, $df = 9$, $p < .01$), too, proved superior to M1, suggesting that the inclusion of cross-lagged paths representing reversed causality is a significant improvement. M4 ($\Delta\chi^2 = 86.78$, $df = 14$, $p < .01$) again proved superior to M1, suggesting that the inclusion of reciprocal cross-lagged paths makes a better fit of the model. Finally, when M3 was compared against M4, the delta χ^2 test was significant ($\Delta\chi^2 = 36.36$, $df = 5$, $p < .01$), indicating that the theoretical model including cross-lagged reciprocal relationships between family pressure, FWC, and family satisfaction fits the best to the empirical data.

To sum up, in the cases of both WFC and FWC, using workload and family conflict to indicate pressure, the Reciprocal Model consistently proved to be superior to other alternative theoretical formulations. It thus suggests that theoretical conceptions of reciprocal relationships between work and family pressure, WFI, and work and family satisfaction come closest to our data. These two specific reciprocal models are depicted in Figures 2 and 3, showing statistically significant cross-lagged paths with path coefficients. For clarity of presentation, though all the auto-relations were significant, only those between adjacent data waves are shown in these figures.

Discussion

The primary purpose of the present three-wave panel study is to examine the role of WFI in the stressor-strain relation. The panel design was adopted to respond to the scarcity



FIGURE 2. Significant Paths ($p < .05$) in the Reciprocal Model of WFC, Showing Both Causal and Reversed Causal Relations Among Workload, Work-to-Family Conflict, and Job Satisfaction ($N = 310$)

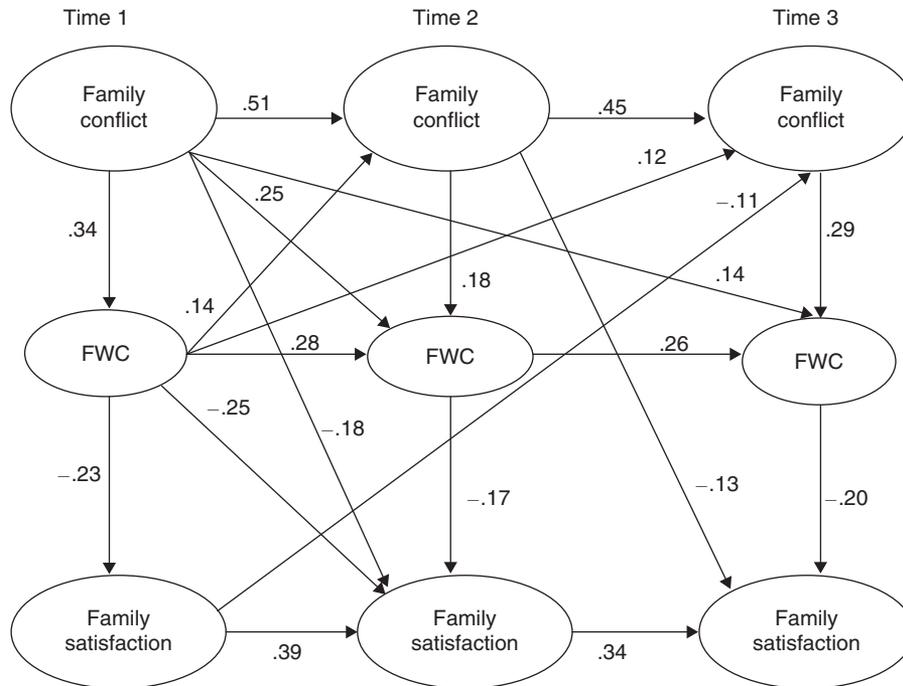


FIGURE 3. Significant Paths ($p < .05$) in the Reciprocal Model of FWC, Showing Both Causal and Reversed Causal Relations Among Family Conflict, Family-to-Work Conflict, and Family Satisfaction ($N = 310$)

of longitudinal data in the work and family literature, and to enable testing of competing theoretical hypotheses depicting a classical causal view, a reversed causal view, and a dynamic recursive view of relations between stressors, WFI, and strains. Compared to previous longitudinal studies (e.g., Demerouti et al., 2004; Kelloway et al., 1999; Leiter & Durup, 1986), our scope is broader as we examined both directions of WFI (WFC and FWC) and their concomitants from work and family domains. In particular, we assessed work and family pressure, WFC, FWC, and work and family satisfaction in three waves, with a six-month interval between each assessment point. This design allowed us to investigate not only the fluctuations of the study variables, but also their relations over an extended period of time (the longest time lag being one year). To our knowledge, such a study does not exist in the work and family research conducted in the West, not to mention in the understudied non-Western societies.

The first advantage of our study design is that it enables an investigation of causality and reciprocal relations in an applied setting, where it is not possible to manipulate variables as in a laboratory experiment. Second, we systematically included pressure and role satisfaction in both work and family domains. We also examined processes involving both directions of WFI. Although there have been studies looking at both sides of WFI, they are mostly cross-sectional in nature. It is imperative to conduct a balanced work-family study using a longitudinal design. Third, instead of using a convenient but restricted sample from one or two organizations, we recruited a diverse sample across different organizational characteristics and industries, to enhance the generalizability of our findings. The last thrust of the present study is the utility of Chinese employees for validating and extending Western-based theories and inferences on work and family issues.

The most important findings emerging from our study are: (1) workload, WFC, and job satisfaction were mutually related to one another over time; and (2) family conflict, FWC, and family satisfaction were also

mutually related to one another over time. Regarding the first finding, as shown by cross-lagged SEM analysis (see Figure 2), workload had both a medium-term (six months) and long-term (one-year) lagged effect on WFC, and the reversed pattern was evident as well. Furthermore, the same pattern of reciprocal relationships was found between WFC and job satisfaction: WFC had a medium-term lagged effect on job satisfaction, and job satisfaction had both a medium-term and a long-term lagged effect on WFC. However, we found no lagged effect of workload on job satisfaction, or vice versa. This is inconsistent with what was found in Demerouti et al. (2004), where work pressure (measured with similar content to our workload construct) had a significant relation with exhaustion and vice versa across time periods in the work domain. However, they used exhaustion to indicate work outcome, which as an aspect of burnout is more similar to the construct of personal well-being than that of satisfaction. Both theories and empirical studies purport that workload if perceived as a challenge stressor may have beneficial effects on job satisfaction but negative effects on well-being (LePine et al., 2005; Podsakoff et al., 2007). Demerouti et al.'s (2004) finding can be interpreted with this conceptualization of workload. However, when job satisfaction is the focal indicator for work outcomes, results are inconsistent, at least for Chinese workers as reviewed earlier in the introduction section (e.g., L. Lu, Kao, Siu, & Lu, 2010; L. Lu et al., 2009, 2011). It is possible that positive and negative relations between workload and job satisfaction for different clusters of people cancel each other out to a null effect in the current sample. This is definitely an intriguing aspect to investigate more rigorously in future studies with Chinese workers. The tentative conclusion we can draw, though, seems to be that constructs of

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work pressure, WFC, and job satisfaction are neither *only* a cause nor *only* a consequence. They affected one another over time in a dynamic stress process of work interfering with family.

Regarding the second finding, as shown by cross-lagged SEM analysis (see Figure 3), family pressure had both a medium-term and a long-term lagged effect on FWC, and the reversed pattern was evident as well. Furthermore, there was a medium-term lagged effect of FWC on family satisfaction, but not vice versa. We also found reciprocal effects between family pressure and family satisfaction. The conclusion we can draw seems to be that constructs of family pressure,

FWC, and family satisfaction are neither *only* a cause nor *only* a consequence. They again affected one another over time in a dynamic stress process of family interfering with work.

Taken together, our findings clearly revealed that WFC is both a precursor and a consequence of work pressure and work-role satisfaction; similarly, FWC is both a precursor and a consequence of family pressure and family-role satisfaction. These findings are consistent with and expand results of Demerouti et al. (2004), who examined cross-lagged relationships between work pressure, WFC, and exhaustion (as a specific form of strain). The reciprocal relationships between family conflict, FWC, and family satisfaction are unraveled for the first time. Our results also add to the cross-domain relations identified by Leiter and Durup (1996), zooming onto within-domain

flows of effects among different work and family variables.

These long-term (six months to one year) reciprocal relationships come close to represent a dynamic view of reciprocal relations among work and family stressors, WFI, and work and family well-being. Applying the transactional model of stress proposed by

Lazarus and Folkman (1984), the person constantly interacts with the environment in a recursive circle rather than in a static fashion. Specifically, people appraise each potentially stressful encounter and take actions to cope with such an encounter, which may result in both physical changes of the environment or inner psychic costs (e.g., psychosomatic and emotional symptoms). These altered environmental conditions and psychological state of mind then lead to a further pool of encounters, so goes the recursive cycle of stressors → coping → strain → stressors. Equally applicable here is Headey and Wearing's (1989) theory of how people maintain a dynamic equilibrium state of well-being through their differential encounters of life situations. Our current results are consistent with findings in the generic stress research field, which depict a dynamic process of life stressors leading to coping efforts, which in turn shape people's perception of and behavioral potential in future encounters (L. Lu, 1991, 1994).

Our findings of long-term reciprocal relationships have important implications for the in-depth understanding of the work and family interface. As reviewed earlier (see the introductory section), most theoretical models position WFI as a cause, mediator, *or* consequence in the stressor-strain chain, whereas role satisfaction is always considered as an outcome. Our three-wave longitudinal study integrates these research findings by showing that both WFI and role satisfaction are causes *and* consequences in a dynamic process in which stressful experiences (e.g., pressure and WFI) breed more negative experiences over time, while rewarding experiences (e.g., satisfaction) protect people from subsequent negative experiences. Such a dynamic view of reciprocal relations can only be supported by longitudinal data. This also implies that theories accounting for the work and family interface need to move away from the simplistic one-way causal models, to capture the more fluid and recursive nature of relationships between focal constructs.

In addition, our findings underline the importance of the inclusion of the family domain in the work and family research. Although some theoretical models

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recognize the duality of work and family conflict (Carlson et al., 2000; Frone, 2003; Frone et al., 1992), extant research tends to overlook FWC and its concomitants (Allen et al., 2000; Byron, 2005; Demerouti et al., 2004; Leiter & Durup, 1996). Since the two forms of WFI are discernible constructs, as we have shown that they have unique antecedents and consequences forming recursive cycles, they both need to be examined. Missing one partner (the family) does not complete the duet.

Besides our findings of reciprocal relationships over time, we also note that work and family pressure, WFC, FWC, and work-and family-role satisfaction were all quite stable experiences. Again these findings are consistent with those from the few longitudinal studies (Demerouti et al., 2004; Leiter & Durup, 1996) but expand the time lag to one year, to more generic role experiences of satisfaction, and to the direction of family interfering with work. Taken together, our findings show that an individual who feels distressed (or satisfied) is likely to be distressed (or satisfied) at a later time point unless something significant happens to alter this emotional state (see also L. Lu, 1999). The challenge now for organizations is to introduce countermeasures to break the vicious circle of stressors → conflict → strain, or to initiate the protective circle of satisfaction → low conflict → low strain.

Practical Implications

Creating, nurturing, and effectively employing organizational family-supportive resources can be one way to meet such a challenge. In the West, flextime has been found to be useful for most employees (e.g., Allen, 2001; Thomas & Ganster, 1995), and one recent study in Taiwan also revealed that flextime could buffer the negative effects of WFC on employees’ work attitudes and job performance (T. T. Chang et al., 2012). For human resource (HR) professionals working to develop policies and procedures, introducing practices such as flextime at the organizational level may help to break the vicious circle. Although autonomy of work time will not directly reduce workload, it provides control over one’s work environment, which has

been proven to be psychologically beneficial (Cooper et al., 2001; L. Lu, Cooper, Kao, & Zhou, 2003). Of course, the most direct way of attack would be providing employees with sufficient resources to enable them to effectively complete their tasks, thus avoiding work overload. Supervisory support in forms of reasonable assignment of work tasks, coaching, and assistance to help subordinates completing tasks will be pivotal to reduce WFC (L. Lu et al., 2009). HR professionals can utilize training resources to teach supervisors to be more supportive and understanding of their subordinates’ needs, both at work and on the work-family interface.

Family resources have been largely overlooked in the extant work and family research and practice. HR professionals can be more creative in nurturing family support resources. For instance, organizing events such as “the family day” will effectively involve family members in organizational life, thus facilitating understanding and bonding among family members. Providing employee assistance programs to help workers resolve family conflict and problems will also reduce family stressors, and build a healthier home environment over time.

Limitations and Directions for Future Studies

Although studying Chinese employees using a longitudinal design with a high retention rate over time is rare in the field, the present study still has certain limitations. First, we used self-report to collect data, which may increase the possibility of contamination of the reported relationships through common method variance (CMV). However, our longitudinal design does remedy the shortcoming to a certain extent. Furthermore, our findings can be accounted for by the classical causal view (e.g., the E-R model; Meijman & Mulder, 1998), the reversed causal view (e.g., the drift hypothesis; Kohn & Schooler, 1983), and the dynamic

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view of stress (e.g., the transactional theory; Lazarus & Folkman, 1984). These findings are also largely consistent with the pattern of relations revealed in previous longitudinal studies (e.g., Demerouti et al., 2004; Leiter & Durup, 1996). Moreover, the individual should be the most important and viable source for providing information regarding his/her unique job and family experiences (Cooper et al., 2001). In fact, some researchers have provided evidence showing that alternatives to self-reports have not proved to be superior in many cases (Frese & Zapf, 1999), and objective job demands are related to self-reports of these demands (Semmer, Zapf, & Greif, 1996).

A related issue of measurement pertains to the operationalization of family conflict used in the present study. Using only family conflict to represent the broad construct of family pressure is itself restricting, and adopting a scale developed for married people (the FCS) may also introduce measurement bias. Although omitting the item tapping the childrearing aspect of family life did not alter results in any way, future studies should endeavor to use multiple indicators for family pressure, to encompass marital conflict, parental conflict, marital tension, relationship agreement, and marital anger, as included in Byron's meta-analysis (2005).

Another limitation of the present study is that we only surveyed Chinese workers in Taiwan; thus, caution needs to be exercised in generalizing our conclusions to other Chinese societies, such as the People's Republic

of China, which has its own political, economic, and social characteristics (L. Lu et al., 2003). Nevertheless, a recent comparative study found that the experiences of WFC and FWC are not different between Taiwanese and mainland Chinese employees (Kao, Lu, & Lu, 2008).

Overall, our results suggest that the main nexus of work/family pressure, WFC/FWC, and role satisfaction at work and family are applicable to Taiwanese workers. Furthermore, these constructs are locked in a reciprocal and recursive web of relations over time. In other words, the general theoretical framework of Western work/family research can be applied to a large extent to the Chinese context. Our study is thus an endeavor in bridging the gap of causality inferences and in-depth knowledge in work/family issues, and our findings may be useful in informing effective organizational strategies for achieving work/family balance in a collectivist cultural context. Future efforts should further broaden the scope of study by including more constructs, such as those from the family domain. Also, the inclusion of additional sources of data such as coworkers, supervisors, and family members can enrich our understanding even further. Finally, we used aggregate measures of WFC and FWC. Future studies may further explore relationships involving three dimensions of WFC and FWC as identified in the Carlson et al. (2000) measure: time-based, strain-based, and behavior-based WFI. Such finer-grained examination will further our knowledge and understanding of the WFI process.

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