ANTECEDENTS AND CONSEQUENCES OF PSYCHOLOGICAL WORKPLACE STRAIN DURING EXPATRIATION: A CROSS-SECTIONAL AND LONGITUDINAL INVESTIGATION

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In this study, we examined nonlinear/interaction effects associated with the antecedents and consequences of psychological workplace strain, using cross-sectional ($N = 165$) and longitudinal ($N = 133$) data collected from Western expatriates in China. The results of this study indicate that family characteristics interact to affect the level of psychological workplace strain experienced by expatriates. In addition, we find an inverse u-curve relationship between psychological workplace strain and supervisory rated job performance for both cross-sectional and longitudinal analyses. Finally, the empirical results lend support to the hypothesized positive relationship between work adjustment measured at Time 1 and job performance measured at Time 2. Implications for expatriate adjustment research and practice are discussed.

Due to the intense competitive pressures from globalization, the importance of employing expatriates by multinational companies has also increased. This trend goes hand in hand with the need to better understand the expatriate adjustment processes in the foreign environment. For instance, a recent large-scale survey with a sample of companies that collectively managed 35,150 expatriates worldwide noted that there is a

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continued growth in the number of expatriates being sent abroad (GMAC Global Relocation Services, the National Foreign Trade Council [NFTC], & SHRM Global Forum, 2003).

Given this continuing trend toward the employment of expatriates, the consequences of their international assignments are of great importance, both to the employing organization and to the expatriates themselves (Garonzik, Brockner, & Siegel, 2000). Typically, studies on expatriates adopt a stressor–strain perspective when examining the antecedents and consequences of expatriate adjustment (Kraimer & Wayne, 2004). However, most studies do not assess the level of workplace strain expatriates experience and presume that the existence of stressors leads to strains (Kahn & Byosiere, 1990). Therefore, a more direct approach in the stressor–strain perspective is to examine the level of psychological workplace strain experienced by expatriates, herein defined as the degree of individuals’ psychological responses experienced in the work environment that are aversive (Jex, Beehr, & Roberts, 1992), and to investigate its antecedents and consequences.

Thus, the primary purpose of this study is to investigate the role of psychological workplace strain during the international assignment process. In particular, we test the interactive effects of family characteristics as antecedents to psychological workplace strain (e.g., Frost, 1983), along with two types of prior international work experience. In addition, we examine the consequences of psychological workplace strain on cross-cultural adjustment and job performance, as well as the temporal relationship of adjustment with job performance.

One of the main contributions of this study is the examination of antecedents and consequences of psychological workplace strain from a more complex perspective. As Mendenhall and Macomber (1997) initially called for, the expatriation process entails much more complexity, involving nonlinear and interaction effects. Thus, our study offers an extension to the existing models of expatriate adjustment (e.g., Aycan, 1997; Black, Mendenhall, & Oddou, 1991; Thomas, 1998) by examining nonlinear/interaction effects within the strain framework. Figure 1 illustrates the overall relationships being examined in this study.

**Psychological Workplace Strain During International Assignments**

Generally speaking, the majority of expatriate studies, which have adopted a stressor–strain perspective, have examined the effect of role stressors such as role ambiguity, role conflict, role novelty, and role overload on expatriate adjustment (cf. Bhaskar-Shrinivas, Harrison, Shaffer, & Luk, 2005; Black et al., 1991; with few exceptions: e.g., Kraimer & Wayne, 2004). This lack of direct measurement of strain is perhaps surprising in that the existence of stressors does not always lead to strain (Kahn &
An outcome refers to any reaction to appraised stressors on the part of an employee, whereas strains are particular types of stressor outcomes that are aversive to the individual, including negative psychological reactions (e.g., anxiety, frustration, anger), physiological problems (e.g., high blood pressure, coronary heart disease), and behavioral reactions (e.g., absenteeism & turnover: Jex & Beehr, 1991; Kahn & Byosiere, 1990). We focus specifically on psychological strains experienced in the workplace in this study.

Related, within the international assignment context, cross-cultural or sociocultural adjustment refers to an individual’s ability to adapt to the foreign environment (Searle & Ward, 1990). Cross-cultural or sociocultural adjustment has been defined as the degree of comfort, familiarity, and ease that an individual feels regarding the new cultural environment (e.g., Black & Stephens, 1989; Mendenhall & Oddou, 1985), which is different from psychological adjustment, referring to the psychological well-being of expatriates in their new cultural environments (Searle & Ward, 1990).

When viewed from a work–family conflict perspective, there are two broad domains, work and nonwork, that expatriates need to adjust to in order to function effectively in the foreign environment (Takeuchi, Yun, & Tesluk, 2002). Nonwork or general adjustment describes the degree of psychological comfort that expatriates experience with the host environment, such as food, climate, and housing conditions, whereas work adjustment represents the degree of psychological comfort with work values, expectations, and standards of the host culture (Black & Stephens, 1989).

### Antecedents to Psychological Workplace Strain

Although we are not aware of any previous studies that have examined the antecedents and consequences of psychological workplace strain...
for expatriates using cross-sectional and longitudinal data, an increasing number of studies has examined the role of spouses during international assignments (e.g., Black & Stephens, 1989; Caligiuri, Hyland, Joshi, & Bross, 1998; Shaffer & Harrison, 1998; Takeuchi et al., 2002).

**Family characteristics.** As Takeuchi et al. (2002) noted, the crossover effects (the influences of a spouse’s attitudes and behaviors on those of the expatriate and vice versa) can be either positive (more support is provided by the spouse to the expatriate) or negative (more stress is transmitted by the spouse to the expatriate). The majority of the empirical studies on expatriate spouses, however, have typically found that spouses who are well adjusted have a positive influence on expatriates (Caligiuri et al., 1998; Shaffer & Harrison, 1998). For example, spouse/family adjustment has been found to be positively related to expatriate adjustment (e.g., Caligiuri et al., 1998; Shaffer & Harrison, 1998; Takeuchi et al., 2002). Shaffer and Harrison (1998) also found that expatriates felt family responsibility to be negatively related to their job satisfaction.

Perhaps one rigorous way of testing the relationship between spouses’ attitudes and behaviors and those of expatriates, which has not been tested to date, is to examine whether or not the absence of the spouse has a positive relationship with the psychological workplace strain perceived by the expatriates. Emphasizing the importance of spouses for expatriate adjustment processes, Takeuchi et al. (2002, p. 658) argued: “One of the processes whereby an individual’s influence crosses over to another is the spouse’s experience at home to the expatriate employee’s experience at work.” For example, Takeuchi et al. (2002) found a positive relationship between spouse general adjustment and expatriate’s work adjustment, as part of the reciprocal relationships between spouses and expatriates, which indicates crossover effects across different domains (nonwork and work). Thus, when the spouse is not physically present to provide logistical, psychological, and physical support at home, the demand on expatriates’ time off work may be increased, resulting in less time at work. This may result in higher strain levels at work. Furthermore, the physical distance from a spouse can become an additional source of strain for expatriates (e.g., they may worry about their spouses’ well-being, which may detract their attention from work). Therefore, we expect that the absence of the spouse will result in higher psychological workplace strain as experienced by the expatriate employees. Thus, we hypothesize the following:

**Hypothesis 1:** The absence of spouses accompanying expatriates on international assignments (measured at Time 1) is positively related to the amount of psychological workplace strain perceived by the expatriates (at Time 1).

A limitation in the expatriate literature is the neglect of the role that children play during international assignments (De Lion & MacPartlin,
According to a recent survey with a sample of companies that collectively managed 35,150 expatriates worldwide (GMAC Global Relocation Services et al., 2003), 59% of expatriates were accompanied by children during international assignments. For expatriates, the presence of children unlike the presence of spouses, during expatriation is more likely to place additional demands on their resources, which increases the amount of workplace strain that expatriate employees experience due to family-to-work conflict (Shaffer & Harrison, 1998). As Edwards and Rothbard (2000) noted, one of the means through which the presence of children may affect expatriates’ workplace strain is through resource drain. Attending to children’s needs, which are likely to be substantially larger due to the foreign relocation, drains time, attention, and energy away from work. For example, finding child-care providers and establishing social ties and networks for children are viewed as significant challenges for expatriates (e.g., Guzzo, Noonan, & Elron, 1994). Thus, we expect that when children accompany expatriates on international assignments, expatriates experience higher levels of workplace strain.

**Hypothesis 2:** The presence of a child or children accompanying expatriates on international assignments (measured at Time 1) is positively related to the amount of psychological workplace strain perceived by the expatriates (at Time 1).

Finally, we expect an interaction between these two variables such that the demand placed on expatriates would be highest when children accompany expatriates to international assignments when spouses do not. This absence of the spouse could be due to it being a single-parent family or spouse career conflict. Previous studies have suggested that parents in single-parent households experience higher workplace strain than those in dual-parent families (e.g., Schumm, Bell, Rice, & Perez, 1996), most likely due to more time-based family–work conflicts (Jacobs & Gerson, 2001). In a similar vein, when the spouse does not accompany the expatriate, the presence of a child or children is likely to place extra time demands on the expatriate, thus, draining expatriates’ resources away from work (Edwards & Rothbard, 2000). Moreover, the expatriate may also have to adjust to some new family roles previously assumed by the spouse. In this case, the level of workplace strain perceived by the expatriates should be highest due to additional demands and roles that expatriates need to expend resources on. Thus, we expect the following:

**Hypothesis 3:** The absence of a spouse interacts with the presence of children accompanying expatriates on international assignments (measured both at Time 1) to influence the level of psychological workplace strain experienced by the expatriates (at Time 1) in such a way that the highest level of workplace strain is experienced in the situation of having children and not having a spouse.
Prior international experience. Despite the intuitive appeal of proposing a positive effect of prior international experience on adjustment, empirical studies examining the role of prior international experiences generally do not provide empirical support for this proposition (e.g., Black & Stephens, 1989; Parker & McEvoy, 1993). This led Bhaskar-Shrinivas et al. (2005 p. 272) to conclude that “the practical upshot of previous assignments (for at least adjustment) is almost nil.” However, they also note that this result may be due to an oversimplification of conceptualizing international experience. Thus, further investigation of this issue seems warranted.

In general, international work experience can be conceived as multifaceted (cf. Tesluk & Jacobs, 1998). Given that certain cultures share similar characteristics and tend to cluster together (e.g., Hofstede, 1980), prior international experiences in the same cultural cluster should be more helpful in understanding the cultural values and appropriate behaviors associated with current assignment (Selmer, 2002; Takeuchi, Tesluk, Yun, & Lepak, 2005). In other words, lacking prior international work experiences in Eastern culture (which is relevant as the same cultural cluster in our study) may increase the workplace strain associated with the foreign work environment.

Moreover, although we expect prior international work experience in a similar culture to be most beneficial for expatriates in reducing workplace strain, we maintain that having prior international work experiences in a different cultural context (such as those in Western cultures) would still be useful in establishing cognitive schema for learning different cultural values and systems (Takeuchi et al., 2005). Here, we differentiate prior international work experiences broadly into two categories as those experiences acquired in Eastern (most relevant for the Chinese context) or Western cultural context (e.g., Selmer, 2002). Although this categorization may appear rather crude, we believe that it, however, captures essential elements of international work experiences. In other words, we expect the following:

Hypothesis 4: Lack of prior international work experience in culturally similar contexts (at Time 1) is more strongly related to the amount of psychological workplace strain perceived by the expatriates (at Time 1) than lack of prior international work experience in culturally dissimilar contexts (at Time 1), although both should be significantly related to psychological workplace strain.

Consequences of Psychological Workplace Strain

Psychological workplace strain and cross-cultural adjustment. With regard to the cross-cultural adjustment of expatriates, previous studies have not examined the impact of psychological work strain directly. During
international assignments, expatriates are likely to experience higher levels of psychological strain due to significant changes in the environment (e.g., Hechanova, Beehr, & Christiansen, 2003). However, being in a new role as liaison between the parent company and the host subsidiary or managing employees with different cultural values would lead to the need to learn the customs and norms of the host subsidiary and new work procedures (Black, Gregersen, Mendenhall, & Stroh, 1999). These demands can be expected to create additional strain in both work and nonwork domains for the expatriate coping with multiple aspects of the foreign culture (Adler, 1997). The levels of both work and general adjustment are expected to decrease as a result of the psychological work strain that expatriates experience. Hence, we expect the following:

Hypothesis 5: Psychological workplace strain (at Time 1) is negatively related to expatriate’s general and work adjustment (at Time 1).

Psychological workplace strain and job performance. Much of the more recent research on stress has been concerned with its impact on the individual employee’s performance (e.g., Jex, 1998) due to the central role that task performance is accorded by human resource professionals and organizational decision makers. There are two competing perspectives regarding the influence of workplace strain. One perspective posits that workplace strain typically has a negative relationship with job performance (e.g., Jamal, 1984; Sullivan & Bhagat, 1992). During international assignments, expatriates may also experience workplace strain in their daily dealings with the tasks that they have to finish and responsibilities that they have to fulfill that are not only more uncertain but also more complex than those that they have been accustomed to at home (cf. Pauwwe & Dewe, 1995). Kraimer, Wayne, and Jaworski (2001) found that work adjustment was positively related to task performance and suggested that workplace strain is likely to have a negative effect on expatriates’ performance, especially because expatriates are learning new organizational roles and facing stressful life events at the same time as they are adjusting to the foreign environment. Thus, we would expect a negative relationship between psychological work strain and performance.

On the other hand, an alternative perspective on stress suggests that the relationship between workplace strain and job performance is more complex and may be conceptualized as an inverted U-curve relationship. The Yerkes–Dodson Law (Yerkes & Dodson, 1908) is among the first models to describe a similar relationship between physiological arousal and performance (e.g., Cohen, 1980; Sullivan & Bhagat, 1992). With respect to the expatriate context, Fontaine (1989, p. 137) asserted that for individuals going through the acculturation process “if stress is managed well, it can have positive effects. An optimal level of stress is necessary for proper
functioning in many tasks . . . too much stress (or too little) interferes with performance.” Hence, a low-to-moderate amount of workplace stress may work as a motivator to get tasks accomplished, which counteracts the negative effect of having workplace strain. However, if expatriates did not feel any pressure, they might not try to manage different responsibilities in the most efficient fashion. This, in turn, would create backlogs in the process, be it for the expatriates themselves (e.g., not being able to execute and complete different tasks) or the employees (e.g., not providing enough leadership/motivation for employees to get their work completed on time). However, the motivating role of workplace strain would not be beneficial beyond a certain point at which the pressure generates too much anxiety and interferes with the efficient work of expatriates. Therefore, we propose

_Hypothesis 6:_ Nonlinear effects of psychological workplace strain (at Time 1) explain additional variance in job performance (at Time 1 and Time 2) over and above those of the linear, negative effects.

**Temporal Relationship Between Adjustment and Performance**

Despite the recognized importance of job performance in the non-expatriate literature, only a handful of studies have adequately tested the expected positive relationship between adjustment and performance within the expatriate adjustment literature (e.g., Kraimer & Wayne, 2004; Kraimer et al., 2001; Parker & McEvoy, 1993). However, none of these studies have examined this relationship longitudinally. Thus, the possibility for a reverse causality explanation according to which expatriates with high job performance levels may be reporting higher levels of adjustment rather than vice versa cannot be refuted.

Theoretically, we expect that adjustment to a new role would have an impact on an individual’s job performance, as demonstrated by comprehensive reviews of the socialization literature (e.g., Fisher, 1986; Wanous, Poland, Premack, & Davis, 1992). Socialization is defined as a process by which an individual acquires the task skills, social knowledge, and behaviors needed to participate as an organizational member (Van Maanen & Schein, 1979). The major tasks of the socialization process are developing a sense of task competence, work-role clarity, realistic expectations about a job, and interpersonal relationships on the job. It is likely that expatriates who are better adjusted to the foreign environment can accomplish these tasks more efficiently. In sum, we expect that sociocultural adjustment would influence expatriates’ job performance in a positive manner.

_Hypothesis 7:_ General and work adjustment (at Time 1) have a positive influence on job performance (at Time 2).
Method

Sample

As a result of the company sponsorship and the usage of company time to fill out the survey, 167 expatriates (out of a possible 168) responded at Time 1. After eliminating those surveys with missing data, the usable sample size remained at 165, giving an effective response rate of 98.21%. These expatriates were working in various locations in metropolitan China, including Beijing, Shanghai, Shenyang, and Qingdao. At Time 2, due to attrition, the sample size became 133, yielding a response rate of 80.61% (out of 165). To evaluate the extent of nonrespondent bias, we conducted an analysis of variance, using a dummy-coded variable \( (0 = \text{those Time 1 respondents who also responded to the Time 2 survey and } 1 = \text{those Time 1 respondents who did not respond to the Time 2 survey}) \) on job performance. Not too surprisingly, Time 2 nonrespondents \( (N = 32) \) had a significantly lower job performance \( (p < .01) \) at Time 1 \( (M = 3.96, SD = .28) \) than those who responded to both surveys \( (M = 4.23, SD = .33) \).

In terms of nationality represented by this sample of expatriates, at Time 1, approximately 71% were from the United States, followed by 14% from Canada, 10% from Australia, and the remaining 5% from the United Kingdom and Hong Kong. The sample included 23 female expatriates (13.94%). The demographics of the expatriates at Time 1 were as follows: mean age = 36.81 years \( (SD = 5.78) \); mean parent company tenure = 7.23 years \( (SD = 1.83) \); mean current assignment tenure or time since expatriates had arrived in the foreign country = 1.61 years (ranging between 1 and 5 years, \( SD = .84 \)). In addition, this was the first international work experience for 53 expatriates (32.10%). The majority of participants \( (N = 118) \) at Time 1 were married (71.52%). Of those married expatriates, 96 had their spouses (81.35%) accompany them to the international assignment and 73 had children (61.86%) with them as well, but 22 (18.64%) of the married expatriates came without a spouse and 45 came without children. In other words, there were 10 single-parent expatriates with children on assignment.

Measures

To reduce particular response sets to the maximum extent possible, we varied the types of measurement (e.g., adjective vs. Likert-type) and anchoring formats (e.g., 1–5 vs. 1–7; poor to excellent vs. strongly disagree to strongly agree) in addition to using a supervisor-rated job performance measure. For job performance, we obtained scores for the variables again
1 year later (Time 2 measurements) to obtain a longitudinal assessment of this variable. Every other variable was measured at Time 1.

*With/without spouse.* We dummy coded whether the spouse accompanied the expatriate on the international assignment (coded 0) or did not (coded 1).

*With/without a child.* We dummy coded whether or not at least one child accompanied the expatriate on the international assignment. We denoted with 1 the presence of at least one child and with 0 the absence of children.

*Lack of prior international work experience in Eastern and Western cultures.* To evaluate the amount of international work experience that expatriates had before taking on this current assignment, we asked the respondents to indicate (a) the total length of time they had worked as expatriates in Eastern cultures in weeks and (b) the total length of time they had worked as expatriates in Western cultures in weeks. Given that the majority of expatriates were from Western countries, we especially instructed them not to include their work experience in their home countries for the purposes of our survey. To be consistent with the stressor–stress–strain framework, we reversed the scores so that higher scores represent lack of prior international work experience.

*Psychological workplace strain.* We used a subscale of the Stress in General (SIG; Stanton, Balzer, Smith, Parra, & Ironson, 2001) scale to measure psychological workplace strain. The eight adjectives, including “nerve-wracking” and “overwhelming,” were used to assess psychological workplace strain. Respondents were asked to indicate “yes” if the item accurately described their work situation, “no” if it did not, and “?” if they could not decide or were uncertain. The scoring for the SIG scale was done by assigning a value of 0 to a “no” response, 3 to a “yes” response, and 1.5 to a “?” response and summing the scores. The reliability of this scale was .79.

*Cross-cultural adjustment.* For nonwork/general and work adjustments, seven- and three-item scales from Black and Stephens’ (1989) cross-cultural adjustment scale were used to measure each facet of adjustment. A sample item for general adjustment asked, “How well are you adjusted in terms of [living conditions]?” whereas that of work adjustment asked, “How well are you adjusted to [specific job responsibilities]?”

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1We did not measure interaction adjustment, as we were more interested in work and nonwork (general) facets of adjustment. Given that interactional adjustment is also related to job performance (e.g., Bhaskar-Shrinivas et al., 2005), it might be the case that the direct (linear and nonlinear) effects of psychological workplace strain on job performance become negligible when interactional adjustment is also included. However, given that Bhaskar-Shrinivas et al. (2005) found that 85–90% of variance in performance was left unexplained by adjustment, we consider this to be less of a case.
seven-point Likert-type scale ranging from 1 (very unadjusted) to 7 (very adjusted) was used. The reliability of the general adjustment scale was .88 and that of the work adjustment scale was .81.2

Job performance. Expatriates’ immediate supervisors provided the ratings of expatriates on three dimensions of job performance (technical performance, communication competency, and management and leadership skills) both at Time 1 and Time 2. The scale measuring the three dimensions consisted of a total of 30 items (10 items for each dimension) and was developed by the multinational company for use in its annual performance appraisals. Sample items for each of the dimensions are as follows: “Utilizing available tracking and measurement systems (e.g., internal quality surveys) in order to identify and prioritize problems or issues” (for technical performance); “Showing a willingness to modify plans based on information and recommendations from others” (for communication competency); and “Encouraging subordinates to learn from their mistakes rather than taking accountability away from them” (for management and leadership). A five-point Likert-type rating format (ranging from 1 = very poor to 5 = excellent) was used. Due to high correlations among the three facets of performance ($r = .66–.84$ for Time 1, $p < .001$ & $r = .67–.83$ for Time 2, $p < .001$), we summed all the facets to create an overall performance scale for both Time 1 and Time 2. The reliability ($\alpha$) of the job performance composite was .90 and .89 for Time 1 and Time 2, respectively.

Analytic Procedures

For the main analyses, we used path analysis in regression to examine the hypotheses rather than structural equation modeling analyses. We chose regression due to limited sample size ($N = 165$), increased power requirement when considering multiple nonlinear and interaction parameters, and the debate surrounding the most appropriate methods for testing interactions and nonlinear effects in structural equation modeling analyses (Rigdon, Schumacker, & Wothke, 1998). In addition, following Cohen and Cohen (1983), we standardized the antecedent variables before creating

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2To examine the discriminant validity of psychological workplace strain from cross-cultural adjustment facets, we performed an exploratory factor analysis in SPSS 12.0 by including all items from psychological workplace strain, work adjustment, and general adjustment scales. It yielded three clear factors: all items from general adjustment scale loaded on Factor 1; all items from psychological work strain scale loaded on Factor 2; and all items from work adjustment scale loaded on Factor 3. There were no cross loadings higher than 0.2. The correlation between Factors 1 and 2 was $-0.25$. The correlation between Factor 1 and Factor 3 was $0.36$. The correlation between Factors 2 and 3 was $-0.35$. Therefore, these scales can be separated in a single factor analysis.
the interaction terms and psychological workplace strain before creating the quadratic term to reduce multicollinearity problems inherent in higher order terms. We also ran supplementary analyses by including several control variables such as age, gender, organizational tenure, current assignment tenure, marital status, and children status to examine whether these control variables had any influence on the results. However, the results were virtually identical. Therefore, we report the results without these control variables below.

Results

Table 1 depicts the descriptive statistics of the variables in this study. As expected, psychological workplace strain was significantly correlated with all the variables of interest, except the control variables. Work adjustment was correlated significantly with job performance for Time 1 ($r = .37, p < .001$) and time 2 ($r = .26, p < .01$). General adjustment, however, was not significantly correlated with job performance.

Table 2 describes the results for Hypotheses 1 through 4. Standardized $\beta$ coefficients associated with each step as well as those at the final step are shown. As shown, the four antecedent variables explained 13% of variance in the level of psychological workplace strain ($\Delta F = 6.15, p < .01$) when entered in the first step. The second step where the interaction term between the two dummy-coded variables is included also explained an additional 4% of variance in the level of psychological workplace strain ($\Delta F = 7.31, p < .01$) beyond that accounted for by the first step.

The results from the first step shown in Table 2 indicate support for Hypothesis 1, which posited a positive relationship between absence of spouse and psychological workplace strain ($\beta = .31, p < .05$), such that expatriates not accompanied by their spouse felt more psychological workplace strain. Similarly, Hypothesis 2, which proposed a positive relationship between the presence of at least one child and psychological workplace strain, received support ($\beta = .23, p < .01$). These coefficients remained significant even when the interaction term was introduced in the third step. Finally, the interaction term between dummy-coded spouse and child variables was significant ($\beta = .21, p < .01$). This interaction effect is plotted in Figure 2, using Aiken and West’s (1991) approach ($\pm 1 SD$). The interaction plot illustrates that expatriates’ level of psychological workplace strain was highest when their spouse did not accompany them on the assignment but at least one child did, which provides support for Hypothesis 3 that hypothesized this interaction.

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3The results of these supplementary analyses with control variables are available upon request to the authors.
## TABLE 1

*Means, Standard Deviations, Reliabilities, and Intercorrelations*

<table>
<thead>
<tr>
<th>Variables</th>
<th>M</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Without spouse</td>
<td>0.58</td>
<td>0.50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2 With children</td>
<td>0.47</td>
<td>0.50</td>
<td>−.60</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Lack of prior international work experience in Eastern culture</td>
<td>49.31</td>
<td>66.24</td>
<td>.11</td>
<td>−.05</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Lack of prior international work experience in Western culture</td>
<td>17.58</td>
<td>38.81</td>
<td>−.06</td>
<td>−.06</td>
<td>−.04</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 Psychological workplace strain</td>
<td>11.30</td>
<td>6.72</td>
<td>.22</td>
<td>−.02</td>
<td>.25</td>
<td>.04</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(.79)</td>
</tr>
<tr>
<td>6 General adjustment</td>
<td>4.72</td>
<td>0.95</td>
<td>−.02</td>
<td>.00</td>
<td>−.27</td>
<td>−.15</td>
<td>−.29</td>
<td></td>
<td></td>
<td></td>
<td>(.88)</td>
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<tr>
<td>7 Work adjustment</td>
<td>4.81</td>
<td>1.03</td>
<td>−.18</td>
<td>.04</td>
<td>−.28</td>
<td>−.03</td>
<td>−.48</td>
<td>.35</td>
<td></td>
<td></td>
<td>(.81)</td>
</tr>
<tr>
<td>8 Job performance (Time 1)</td>
<td>4.23</td>
<td>0.33</td>
<td>−.02</td>
<td>−.11</td>
<td>−.32</td>
<td>.02</td>
<td>−.36</td>
<td>.11</td>
<td>.37</td>
<td></td>
<td>(.90)</td>
</tr>
<tr>
<td>9 Job performance (Time 2)</td>
<td>4.13</td>
<td>0.32</td>
<td>−.09</td>
<td>.04</td>
<td>−.29</td>
<td>.05</td>
<td>−.19</td>
<td>.04</td>
<td>.26</td>
<td>.75</td>
<td>(.89)</td>
</tr>
</tbody>
</table>

*Note.* Listwise. \( N = 133 \). Correlations greater than .16 are significant at the .05 level (two-tailed).
### TABLE 2
Hierarchical Regression Results: Antecedents of Psychological Workplace Strain

<table>
<thead>
<tr>
<th>Step</th>
<th>Predictors*</th>
<th>Psychological workplace strain (Time 1)</th>
<th>$\beta$</th>
<th>At step</th>
<th>Final step</th>
<th>$R^2$ ($F$)</th>
<th>$\Delta R^2$ ($\Delta F$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Without spouse</td>
<td>.31**</td>
<td>.39**</td>
<td>.13** (6.15)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>With children</td>
<td>.23**</td>
<td>.28**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lack of prior international work experience in Eastern culture</td>
<td>.24**</td>
<td>.24**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lack of prior international work experience in Western culture</td>
<td>.13*</td>
<td>.17*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Without spouse $\times$ with children</td>
<td>.21**</td>
<td>.21**</td>
<td>.17** (6.57)</td>
<td>.04** (7.31)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. $N = 165$.

*All measured at Time 1.

*p $\leq .05$  **p $\leq .01$ (one-tailed).

Hypothesis 4 posited that a lack of prior international work experience in culturally similar context (i.e., in Eastern cultures) had stronger negative impact on the amount of psychological workplace strain experienced by expatriates when compared to a lack of prior international work experience in cultural dissimilar context (i.e., in Western cultures). As indicated in Table 2, this hypothesis received support. We found that a lack of prior international work experience in Eastern cultures to be significantly positively related to psychological workplace strain ($\beta = .24$, $p < .01$), compared to a lack of prior international work experience in Western cultures having significantly, positive relationship to psychological workplace strain ($\beta = .13$, $p < .05$), albeit at a smaller magnitude.

Table 3 shows the results for Hypothesis 5, which theorized a negative linear relationship between psychological workplace strain and cross-cultural adjustment. The results strongly supported this hypothesis in that psychological workplace strain had significant negative relationships to both general adjustment ($\beta = -.35$, $p < .01$) and work adjustment ($\beta = -.43$, $p < .01$). In addition, as a supplementary analysis, we included a quadratic nonlinear term of psychological workplace strain in the second step to explore potential nonlinear effects. The results did not provide any indication of this nonlinearity for general or work adjustment.

For Hypotheses 6, Table 4 shows the results of hierarchical regression analyses on job performance at Time 1 and Time 2. Hypothesis 6 posited that psychological workplace strain would exhibit an inverted U-curve relationship to job performance. The results for job performance at Time 1 and Time 2 are highly consistent in that the quadratic term of psychological workplace strain explained an additional 5–6% of variance over and
<table>
<thead>
<tr>
<th>Step</th>
<th>Predictors</th>
<th>General adjustment (Time 1)</th>
<th>Work adjustment (Time 1)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>β</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>At step</td>
<td>Final step</td>
</tr>
<tr>
<td>1</td>
<td>Psychological workplace strain (Time 1)</td>
<td>−.35**</td>
<td>−.35**</td>
</tr>
<tr>
<td>2</td>
<td>Psychological workplace strain² (Time 1)</td>
<td>−.02</td>
<td>−.02</td>
</tr>
</tbody>
</table>

*Note. N = 165.
*p ≤ .05 **p ≤ .01 (one-tailed).
TABLE 4
Hierarchical Regression Results: Psychological Workplace Strain on Job Performance

<table>
<thead>
<tr>
<th>Step</th>
<th>Predictors</th>
<th>Time 1 (N = 165)</th>
<th>Time 2 (N = 133)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>β</td>
<td>β</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>At step</td>
<td>Final step</td>
</tr>
<tr>
<td>1</td>
<td>Psychological workplace strain</td>
<td>−.38**</td>
<td>−.38**</td>
</tr>
<tr>
<td></td>
<td>(Time 1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Psychological workplace strain²</td>
<td>−.22**</td>
<td>−.22**</td>
</tr>
<tr>
<td></td>
<td>(Time 1)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

R² (F) | ΔR² (ΔF) | R² (F) | ΔR² (ΔF) |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>−.14**</td>
<td>26.90</td>
<td>.04</td>
</tr>
<tr>
<td>2</td>
<td>−.19**</td>
<td>18.79</td>
<td>.05</td>
</tr>
</tbody>
</table>

*p ≤ .05 **p < .01 (one-tailed).
above that of the linear term in the level of expatriate job performance for both Time 1 ($\Delta F = 9.30, p < .01$) and Time 2 ($\Delta F = 8.52, p < .01$). The $\beta$ coefficient associated with this quadratic term was also significant ($\beta = -.22, p < .01$ and $\beta = -.25, p < .01$ for Time 1 and Time 2 job performance, respectively). Figure 3 shows this relationship between psychological work strain and job performance at both time periods. Therefore, Hypothesis 6, which posited the inverted U-curve relationship, was strongly supported.

Finally, Table 5 depicts the results of the longitudinal analysis on the relationships between general and work adjustments, and job performance. Hypothesis 7 considered general and work adjustments (at Time 1) to have positive effects on job performance (at Time 2). The results included in Table 5 offer partial support for this hypothesis. More specifically, work adjustment at Time 1 had a significant positive relationship to job performance at Time 2 ($\beta = .25, p < .01$) obtained a year later. However, general adjustment at Time 1 did not have a significant relationship to job performance at Time 2 ($\beta = -.10, p > .05$).

Discussion

The main purpose of this study was to explore and highlight the importance of psychological workplace strain from a holistic perspective (Aycan, 1997; Mendenhall & Macomber, 1997), examining the antecedents and
TABLE 5
Hierarchical Regression Results: Longitudinal Analysis on Job Performance

<table>
<thead>
<tr>
<th>Step</th>
<th>Predictors</th>
<th>At step</th>
<th>Final step</th>
<th>$R^2$ (F)</th>
<th>$\Delta R^2$ (ΔF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Psychological workplace strain (Time 1)</td>
<td>−.19*</td>
<td>.09</td>
<td>.04* (4.89)</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Psychological workplace strain$^2$ (Time 1)</td>
<td>−.25**</td>
<td>−.03</td>
<td>.10** (6.85)</td>
<td>.07** (8.52)</td>
</tr>
<tr>
<td>3</td>
<td>General adjustment (Time 1)</td>
<td>−.10</td>
<td>−.03</td>
<td>.14** (5.23)</td>
<td>.04** (3.37)</td>
</tr>
<tr>
<td>4</td>
<td>Work adjustment (Time 1)</td>
<td>.25**</td>
<td>.03</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Job performance (Time 1)</td>
<td>.76**</td>
<td>.76**</td>
<td>.56** (32.85)</td>
<td>.42** (123.31)</td>
</tr>
</tbody>
</table>

Note. $N = 133$.

*p ≤ .05    **p ≤ .01 (one-tailed).

Figure 3: The Inverted U-Curve Relationship Between Psychological Workplace Strain and Job Performance.

consequences of psychological workplace strain, including more complex conceptualization of its relationships, such as nonlinear and interaction effects. In addition, we investigated the temporal relationship between general and work adjustments (at Time 1), and job performance (at Time 2), using longitudinal data obtained 1 year apart from each data collection.
The results of this study, in sum, highlight the importance of psychological workplace strain during the expatriation process.

More specifically, the findings of this study call attention to the importance of a more holistic, process-oriented approach to expatriate adjustment that utilizes longitudinal research designs and includes both psychological adjustment, which refers to expatriates’ psychological well-being in the foreign culture (Searle & Ward, 1990; Ward & Searle, 1991) and sociocultural adjustment. For example, the set of antecedents included in this study clearly illustrates the importance of family characteristics in expatriates’ psychological workplace strain, underscoring the recent emphasis on expatriate research that includes spouses/family (e.g., Caligiuri et al., 1998). In addition, one of the neglected issues in the expatriate adjustment studies has been the role that children play during international assignments (De Lion & MacPartlin, 1995). Our findings indicate that, at the very least, expatriate studies need to investigate the interplay among expatriates, their spouses, and their children, if we are to understand the intricate process of adjustment to a foreign culture.

The findings of this study also emphasize the value of differentiating prior international (work) experience. Perhaps Bhaskar-Shrinivas et al.’s (2005) conclusion about the practical impact of previous assignments (at least, for adjustment) being almost nil needs to be qualified substantially. As our findings indicate, it may be the case that prior international experience has an indirect influence on adjustment through other variables, such as psychological workplace strain, which have not been examined in past empirical studies. In addition, as Bhaskar-Shrinivas et al. (2005) noted, prior conceptualizations regarding international experience and its relationships might have been too simple to capture the meaning of its impact (cf. Takeuchi et al., 2005). Thus, results from our study corroborate Takeuchi et al.’s (2005) study in the sense that the effects of prior international experience appear to be more complicated than the previous theorizing has recognized. Moreover, this is one of the first studies in the expatriate adjustment literature that has examined the relationships between adjustment and job performance longitudinally. We found work adjustment at Time 1 to be related to job performance at Time 2 but not with general adjustment at Time 1. Thus, we deem this to be another contribution of the study.

Finally, although we did not examine the relationship between psychological adjustment and sociocultural adjustment by itself in this study, given the pervasive influence of psychological workplace strain on expatriates’ job performance, we encourage future studies to include physiological indicators of strain as well as both types of adjustments, that is, psychological and sociocultural adjustments, in order to explicate the cross-cultural adjustment processes in more detail.
Limitations

Of course, the results of the present study must be viewed in light of the study’s limitations. First, a response rate of 80.61% would be considered very high in any field research, which may raise a concern about social desirability responses because of the company sponsorship. However, if social desirability responses were a significant factor, expatriates would have reported lower levels of psychological workplace strain (a socially desirable response), which would have attenuated the size of the correlation associated with psychological workplace strain and other variables and worked against our hypotheses. Similarly, another weakness of the study is that, on average, the expatriates in this study had already been on assignment for over a year, which might have restricted the range of adjustment scores as well as other variables included in this study. Thus, the findings from this study should be considered as conservative estimates of actual relationships, which may be one of the reasons for the nonsignificant relationships between general adjustment at Time 1 and job performance at Time 2. Future studies, therefore, should include a higher number of expatriates who have recently arrived on international assignments.

Second, given our theoretical emphasis on psychological workplace strain, we did not include other variables previously found to relate to general and work adjustment (e.g., Black et al., 1991; Shaffer & Harrison, 1998). In particular, Kraimer and Wayne (2004) included three role and four situational stressors for their study, whereas we considered the relationships between four antecedents and psychological workplace strain. Hence, future research may benefit by expanding the stressor variables included in the study and elucidating the intricate mechanisms involved during cross-cultural adjustment (Aycan, 1997). Furthermore, it would have been useful to include a measure of psychological strains associated with nonwork domain, such as from acculturation, in addition to the psychological workplace strain measured in this study to examine their independent as well as their combined effects during the expatriate adjustment process.

Finally, the sample was limited to Western expatriates assigned to China from one multinational company with the majority of respondents being male expatriates. Therefore, the generalizability of the results to other Western expatriates in different companies, to non-Western expatriate samples, and to female expatriates may be questioned. Thus, the generalizability of this research to non-Western and female expatriates needs to be investigated in the future. Perhaps comparative, cross-cultural samples of expatriates (e.g., Western expatriates in China and Chinese expatriates in the United States) may be helpful in uncovering these generalizability issues further.
Implications

There are several implications of our research for human resource professionals in multinational companies who need to manage expatriation processes. First, there are implications with regard to employee selection for international assignments, given some of the relationships found in this study. In line with what others have noted in the past (e.g., Caligiuri et al., 1998), our results also highlight the importance of including spouses/family members during the selection process. In addition, however, these results underscore the extra weight that single-parent expatriates must carry and the added difficulties they encounter during international assignments. Given that single-parent expatriates can be considered a high-risk group, human resources managers may need to inform them of the added difficulties associated with taking children on assignment to provide more realistic job preview but also provide extra support when sending single-parent expatriates on overseas assignment.

Second, depending on the nature of the international assignment, multinationals may select employees with more or less accumulated international work experiences. For example, if multinationals expect that the expatriates should be able to control and coordinate activities from the beginning (i.e., challenging assignments; e.g., Shay & Baack, 2004), expatriates with more and perhaps culture-specific international work experience should be chosen so that their experienced level of psychological workplace strain will be lower than those of less experienced expatriates. In contrast, if the multinationals want to develop their employees by providing them opportunities to accumulate global competencies (e.g., Shay & Baack, 2004), they may be better off selecting those employees with less international experience and sending them to less challenging assignment in the beginning.

Finally, multinationals can use our findings for stress management of expatriates. Even with significant amount of support provided by the multinationals, expatriates are likely to experience psychological workplace strain sometimes during the assignment period. However, multinationals can inform the expatriates that some level of workplace strain is inevitable but that it facilitates job performance. Therefore, by highlighting the positive features of psychological workplace strain, multinationals may indeed reduce the worries that expatriates may have prior to actual assignment.

In sum, this study has extended the literature by drawing attention to the importance of psychological workplace strain during international assignment and adjustment process, which underlines the importance of paying attention to daily irritations as well as critical life events for expatriates on international assignments because of the pervasive role that
workplace strain plays during these assignments. If unattended, it may lead to very costly consequences, which not only affect the organization but also the individual expatriate as well. Furthermore, for expatriate researchers, examining the effect of chronic workplace strain may provide an alternative view to the culture shock and U-curve adjustment hypothesis because “stress experienced in a work setting can be better conceptualized in terms of persisting conditions and daily hassles than as life events” (Kahn & Byosiere, 1990, p. 586). Future research should continue to incorporate theories and empirical findings from different areas of research that facilitate our understanding of the expatriate adjustment process.

REFERENCES


