

## THE IMPACT OF PSYCHOLOGICAL CONTRACT BREACH ON WORK-RELATED OUTCOMES: A META-ANALYSIS

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A meta-analysis was conducted to examine the influence of psychological contract breach on 8 work-related outcomes. Breach was related to all outcomes except actual turnover. Based on affective events theory, we developed a causal model integrating breach, affect (violation and mistrust), attitude (job satisfaction, organizational commitment, and turnover intentions), and individual effectiveness (actual turnover, organizational citizenship behavior, and in-role performance). Structural equation modeling was used to test the model. The results indicated that affect mediates the effect of breach on attitude and individual effectiveness. Two moderators were also examined including the type of breach measure (global vs. composite) and the content of the psychological contract breach (transactional vs. relational). Theoretical and practical implications of the results are discussed.

In the last 2 decades there have been major changes in the structure of organizations including downsizing and outsourcing. Such changes have altered employees' perceptions of and reactions to the employment relationship (i.e., the employee–employer relationship). Drawing on the

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seminal work of Argyris (1960), Levinson, Price, Munden, Mandl, and Sooley (1962), and Schein (1965), Rousseau (1989, 1995) developed psychological contract theory as a framework for understanding the employment relationship. The number of studies focusing on the psychological contract has grown tremendously during the past 15 years. Increasingly, the psychological contract is seen as an important framework for understanding the employment relationship (Shore et al., 2004; Taylor & Tekleab, 2004). As the psychological contract research has grown in quantity and complexity, several narrative reviews have begun to emerge (e.g., Rousseau & Tijoriwala, 1998; Shore et al., 2004; Taylor & Tekleab, 2004), but thus far no quantitative review or meta-analysis of the psychological contract research has been conducted. Therefore, given the importance of the psychological contract in the workplace (e.g., Guzzo, Noonan, & Elron, 1994; Turnley & Feldman, 1999), we (a) conducted a meta-analysis of the impact of psychological contract breach on a number of workplace outcomes, (b) integrated these meta-analytic correlations concerning psychological breach studies with other meta-analyses in order to test a model based on affective events theory (AET; Weiss & Cropanzano, 1996), and (c) explored the situational factors (both conceptual and methodological) that may moderate the effects of psychological contract breach on outcomes.

This study makes three major contributions to the psychological contract literature. First, this study provides a comprehensive, quantitative review of the impact of psychological contract breach on employee outcomes. Although individual studies are valuable, a meta-analysis enables one to synthesize the empirical findings with a much larger sample size across settings, providing a closer estimation of the true effect in the population. Second, this study goes beyond synthesizing existing empirical evidence by developing and testing a theoretical model highlighting the mediating mechanism between psychological contract breach and outcomes. Weiss and Cropanzano's (1996) AET served as a guide for studying how breach, affective reactions, and subsequent workplace attitudes and behaviors relate to each other. To build the correlation matrix for *SEM*, we used meta-analytic correlations from this study and the correlations between various outcomes from other meta-analyses. Thus, this study sheds light on the body of empirical research on the relation between breach and outcomes and makes important theoretical contributions. Third, this study explores whether moderators can explain the variability in the effect sizes reported in individual studies. Specifically, we test two moderators: type of breach measure and content of the breach. Understanding the role of these potential moderators has implications for future research on the psychological contract.

*Definitions and Boundary Issues*

The *psychological contract* is defined as “individual beliefs, shaped by the organization, regarding terms of an exchange agreement between individuals and their organization” (Rousseau, 1995, p. 9). Psychological contract is more subjective than a legal contract. The psychological contract also has been distinguished from the broader construct of expectations. The promissory expectations in a psychological contract are “only those expectations that emanate from perceived implicit or explicit promises by the employer” (Robinson, 1996, p. 575). We define *psychological contract breach* as the employee’s perception regarding the extent to which the organization has failed to fulfill its promises or obligations (Robinson & Rousseau, 1994). In the psychological contract literature, the term *violation* and *breach* are sometimes used interchangeably. However, Morrison and Robinson (1997) distinguish between the two constructs by suggesting that breach is the cognitive evaluation that one’s organization has failed to fulfill its obligations, whereas violation is the emotional and affective state that may follow from the breach cognition. We follow this conceptual distinction and examine violation as an outcome of breach.

*Psychological Contract Breach and Employee Reactions*

In the past 2 decades, there have been many studies on the consequences of psychological contract breach. However, the measures of psychological contract breach have been inconsistent (cf. Rousseau & Tijoriwala, 1998). Thus, when results differ across studies it may be due to the use of different psychological contract measures or research artifacts such as sampling error and unreliability. A meta-analysis enables us to integrate available empirical evidence using a uniform framework and to assess the main effect of breach on each category of outcomes.

Another limitation of prior psychological contract research is that the outcomes examined lack a theoretically based organizing framework. Recently, Kickul, Lester, and Belgio (2004) categorized outcomes into attitudes and behaviors, and developed separate hypotheses for each category. Although this categorization represents progress in the literature, it can be enhanced by considering employees’ emotions or affective reactions (Ashkanasy & Daus, 2002; Barclay, Skarlicki, & Pugh, 2005). Weiss and Cropanzano’s (1996) AET also emphasizes the unique role of affective reactions in the workplace as a counterbalance to theories that exclusively focus on judgment processes; the importance of affective reactions has been supported in many studies (e.g., Dasborough, 2006; Judge, Scott, & Ilies, 2006). According to AET, the experience of a positive or negative

work event (e.g., perceived breach) can elicit affective reactions (e.g., anger) that contribute to the formation of work attitudes and behaviors (Mignonac & Herrbach, 2004; Rupp & Spencer, 2006). Given its theoretical importance and the empirical attention it has received, we include affective reactions as an independent category of outcomes. We develop hypotheses for each category of outcomes below.

### *Breach and Affective Reactions*

Affective reactions are employees' emotional experiences following a significant workplace event. Two reactions that we explore as proximal outcomes of breach are violation and mistrust. Based on Morrison and Robinson's (1997) argument, we propose that psychological contract breach is a significant workplace event that triggers employee affective reactions. Psychological contract violation captures a focal person's emotional responses including frustration and anger that follow breach (Morrison & Robinson, 1997). Although there are moderators of this relationship such as employee attributions for the breach and fairness judgments (Robinson & Morrison, 2000), breach is generally assumed to increase feelings of violation (Raja, Johns, & Ntalianis, 2004). Thus, we expect a positive relationship between perceptions of breach and feelings of violation.

A second affective reaction to breach is mistrust. McAllister (1995) contends that trust has an affective component, and people make emotional investments in trust-based relationships. These relationships are characterized by the two parties' genuine care and concern for the welfare of each other. Although trust also has a cognitive component, it has been argued that the affective component is more dominant when negative events are already experienced (Young & Daniel, 2003). Mistrust reflects interpersonal hostility, and previous scholars tend to define mistrust as an emotional reaction. For example, Webb (1996) identified mistrust as part of emotional distress, and Raja et al. (2004) explicitly defined mistrust as an emotional response to breach (p. 354). Because most empirical studies examine trust/mistrust as a concept distinct from violation (e.g., George, 2003; Robinson & Rousseau, 1994), we include mistrust as a separate indicator of affective reactions. When breach occurs, employees question the integrity of the organization and become overwhelmingly skeptical, cynical, or hostile toward the organization's initiatives, all of which are indicators of mistrust.

*Hypothesis 1a:* Perceived breach is positively related to violation.

*Hypothesis 1b:* Perceived breach is positively related to mistrust.

*Breach and Work Attitudes*

Work attitudes are employees' evaluation of the employer and the work in general. One classic model of attitude structure, referred to as the tripartite model, suggests that attitudes comprise three components: affect, cognition, and behavioral intentions (Bagozzi, 1978; Breckler, 1984; Kothandapani, 1971; Rosenberg & Hovland, 1960). However, the AET model separates the affective component and views it as an antecedent of the work attitude. Consistent with this, we examine the general work attitude comprised as the remaining two components of cognition and behavioral intentions.

Compared with affect, attitude is more evaluative. The work attitudes of job satisfaction, organizational commitment, and turnover intentions have received extensive attention in terms of consequences of breach. For job satisfaction, AET specifically distinguishes it from affective reactions and defines it as "a positive or negative evaluative judgment of one's job or job situation" (Weiss & Cropanzano, 1996, p. 2). Job satisfaction is said to be a function of the perceived relationship between what one wants from one's job and what one perceives it as offering (Locke, 1969). Following this logic, a discrepancy between promised and received inducements is likely to lead to feelings of dissatisfaction.

Likewise, when breach occurs, lowered employee commitment to the organization is likely. Organizational commitment describes the strength of an individual's identification with and attachment to an organization (Meyer & Allen, 1984). In Meyer and Allen's (1991) three-component commitment model, affective commitment is the most consistent with the conceptual and operational definition of attitudes, and it has been termed "attitudinal commitment" (Iverson & Buttigieg, 1999). Thus, we focus on this aspect of commitment. When psychological contract breach occurs, employees are less likely to identify with the organization and maintain their commitment.

Turnover intentions reflect the subjective probability that an individual will leave his or her organization within a certain period of time. Similar to organizational commitment, turnover intentions can serve as an indicator of the extent of one's psychological attachment to the organization. As opposed to actual turnover, the turnover intentions variable is not dichotomous. In addition, it is less constrained by exogenous factors (such as availability of an alternative job) and thus more accurately reflects one's attitude toward the organization. Intention to quit is a common response to negative events with work (Lum, Kervin, Clark, Reid, & Sirola, 1998). Thus, psychological contract breach, as a negative event for employees, can increase their tendency to leave.

*Hypothesis 2a:* Perceived breach is negatively related to job satisfaction.

*Hypothesis 2b:* Perceived breach is negatively related to organizational commitment.

*Hypothesis 2c:* Perceived breach is positively related to turnover intentions.

### *Breach and Work Behaviors*

Work behaviors are employees' work-related actions. Compared with affective reactions and attitudes, behaviors can lead to a more tangible impact on the workplace. In this study we use measures of individual effectiveness as indicators of employee behavior (e.g., Harrison, Newman, & Roth, 2006). Actual turnover, organizational citizenship behavior (OCB), and in-role performance have been frequently examined as outcomes of breach. With respect to turnover, researchers have argued that permanent withdrawal from an organization is one possible quick response to a dissatisfying job. Turnover as a result of breach perceptions not only severs the dissatisfactory employment relationship but also "punishes" the organization because turnover usually results in high costs to employers due to the substantial time and money required to refill positions (e.g., in recruitment, selection, and training), and it can hurt regular business operations as well as workforce morale (Kacmar, Andrews, Van Rooy, Steilberg, & Cerrone, 2006).

OCB has been defined as contextual performance because the behaviors are beneficial, discretionary, and not included in an employee's formal job description (Organ, 1988). Because such behaviors are not explicitly required by the job, there are no formal sanctions for not engaging in them. As such, OCB can be considered a behavioral gauge of workers' reactions to their employment relationship. That is, employees are less likely to engage in OCB when they perceive a negative relationship with their employer. Research has indeed supported this contention by demonstrating the positive influence of social exchange relationships on OCB (Konovsky & Pugh, 1994; Van Dyne, Graham, & Dienesch, 1994). In addition, Robinson and Morrison (1995) found that high levels of breach were associated with low levels of OCB assessed a year later.

In-role behaviors are defined as being part of one's job and are recognized by the organization's formal reward systems (Katz & Kahn, 1978). Because in-role performance represents an obligation on the employees' behalf, employees may refuse to fulfill such obligations if they perceive that the organization did not fulfill its obligations. Turnley, Bolino, Lester, and Bloodgood (2003) supported the general idea that psychological contract breach is negatively related to employees' in-role performance.

*Hypothesis 3a:* Perceived breach is positively related to actual turnover.

*Hypothesis 3b:* Perceived breach is negatively related to OCB.

*Hypothesis 3c:* Perceived breach is negatively related to in-role performance.

### *Theoretical Models of the Effect of Breach on Outcomes*

As reviewed earlier, much of the empirical psychological contract research has focused on the negative consequences of breach. Those studies have been helpful in establishing the legitimacy of the psychological contract as a research domain since the late 1980s. However, prior studies have often failed to address the theoretical mechanism of the effect of breach on outcomes. Rather, previous research focused on whether breach had a significant bivariate association with the outcome, and expected similar effects without considering the theoretical differences and relationships among the outcomes. Social exchange theory (Blau, 1964) and justice theory (Greenberg, 1990) were typically used as the theoretical basis for these studies. The general rationale is that employees calculate the output–input ratio and compare it to some standard, and when perceiving a discrepancy, they adjust their inputs in an attempt to achieve balance in the relationship. Although both theories are helpful in predicting a negative association between breach and workplace outcomes, they have two limitations. First, they do not differentiate among outcomes or specify the mechanisms through which breach affects behavioral or attitudinal outcomes. Second, they assume all reactions are cognitive and objective judgments, and thus ignore the role of emotions. A more fine-grained theory is needed to organize the relevant outcomes in order to understand the causal and mediating process of the effects of breach on outcomes.

As mentioned earlier, AET (Weiss & Cropanzano, 1996) provides a theoretical framework for understanding the effects of breach on outcomes. AET emphasizes employees' emotional reactions in the workplace and was developed as a counterbalance to traditional theories of decision processes that tended to ignore these emotional reactions. AET contends that researchers must distinguish between affective reactions and work attitudes, and should recognize that affective reactions are not necessarily objective or rational. In fact, Weiss and Cropanzano argue that after a negative workplace event, individuals will not develop rational appraisals of the situation immediately. Instead, individuals usually respond in terms of negative affect or emotional arousals such as anger or fear, and research in neural system and brain functions has supporting evidence for that assumption (LeDoux, 1995). Once triggered, the affective reactions may overwhelm the individual, and the importance and relevance of the event to personal goals will determine the intensity of the negative affect.

Such affect then influences attitude in at least two ways. First, affect influences the *content* of thinking. Emotional arousals can make people more selective of what kind of information to recall, attend to, and interpret. Second, affect influences the *process* of thinking. For example, Forgas and George (2001) indicate that negative affect facilitates “externally oriented, bottom-up, and systematic thinking style” (p.8), and according to Weiss and Cropanzano, such effortful cognitive processing can serve as a distraction and help eliminate negative affect. Thus, as the most proximal reaction to a significant event, affect plays a central mediating role for the effect of the event on other outcomes such as attitude.

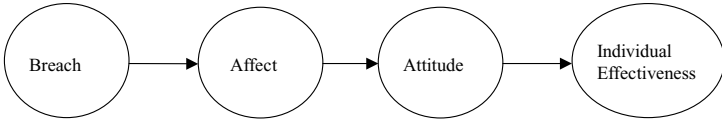
Ajzen and Fishbein’s (1980) theory of planned behavior has often been used to support the perspective that attitude can help predict subsequent behavior. Attitude reflects the degree to which the person has a favorable or unfavorable evaluation of the behavior in question, and Ajzen (1988) proposed that an attitude impels behavior when the two constructs are compatible in their directions, specificity, context, and time. Empirical evidence also supports such a perspective. For example, Becker, Billings, Eveleth, and Gilbert (1996) found that employees’ commitment to their organizations can predict job performance. In the same manner, Harrison et al. (2006) report a global job attitude including job satisfaction and organizational commitment can predict individual effectiveness, which is a global behavioral criterion including variables such as focal performance, contextual performance, and turnover.

Following AET and related theories, we propose that breach is a significant workplace event that results in emotional or affective reactions. In turn, affect is expected to predict work attitude including job satisfaction, organizational commitment, and turnover intentions. Finally, the model indicates that attitude will be predictive of individual effectiveness in the form of actual turnover, in-role performance, and OCB. These relationships are depicted in the hypothesized model, shown as Model A in Figure 1.

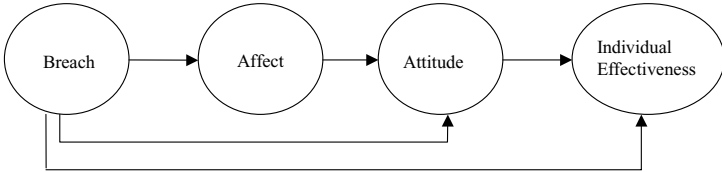
We also propose two alternative theoretical models, which are illustrated in Figure 1. In Model B, we added a path from breach to attitude and another path from breach to individual effectiveness, depicting the direct effects of breach on these two outcomes. This model suggests that affect may partially mediate the relation between breach and attitude and individual effectiveness. In Model C, direct paths from breach to affect, attitude, and individual effectiveness were included, and we assumed no causal relationships among the outcomes. This model reflects the assumption of most empirical studies that breach causes the three outcomes independently.



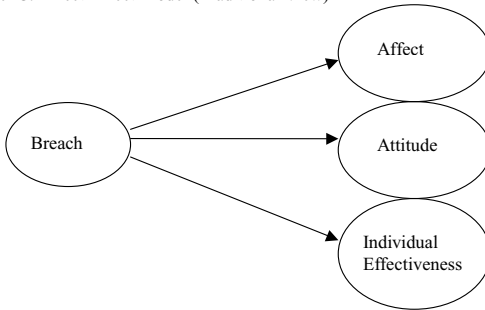
Model A. Full Mediation Model (Hypothesized)



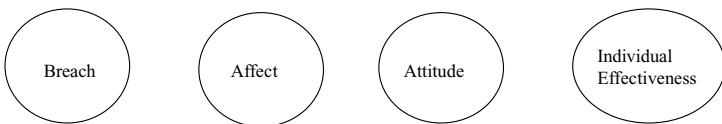
Model B. Partial Mediation Model



Model C. Direct-Effect Model (Traditional View)



Model D. Null model



**Figure 1: Conceptual Models of Relationships Among Breach and Outcomes.**

*Potential Moderating Variables*

*Measures of Breach*

There are basically three ways breach has been measured. The first approach is what we refer to as a *composite measure*. This type of measure differs from the other measures in that it refers to various content

items of the psychological contract (e.g., high pay, training, and job security) and asks respondents how much the organization has fulfilled its obligation or promise on each item. The second approach is what we call a *global measure*. This type of measure does not refer to any specific content item but directly assesses subjects' overall perceptions of how much the organization has fulfilled or failed to fulfill its obligations or promises. For example, one item of Robinson and Morrison's (2000) global measure of breach is "Almost all the promises made by my employer during recruitment have been kept thus far" (reverse scored). A third common measurement approach for breach is what we call a *weighted measure*. This type of measure is similar to the composite measure in that it uses a number of content-specific items of the psychological contract and asks respondents their perceptions of breach in these contents. However, it also asks subjects to indicate the importance on each of the content items. Each raw breach score is multiplied by the respective perceived importance score and then summed or averaged to yield a weighted breach score (e.g., Thompson & Heron, 2005; Turnley & Feldman, 1999). In this way, contract items that were highly important to employees were weighted more heavily in the calculation of the overall score of breach. A majority of the empirical studies on the psychological contract have used either composite measures or global measures. Because we did not find three or more studies using weighted measures on the same outcome variable, we were unable to form a separate category to be tested in the moderator analysis. Therefore, we develop a hypothesis comparing the composite and global measures only.

There have been some critics of composite measures of breach because what is valued in the psychological contract may vary from one employment relationship to the next. McLean Parks, Kidder, and Gallagher (1998) believe that the composite approach to measuring the psychological contract is not appropriate for contingent workers or complex employment arrangements where it is "difficult to develop a set of content measures that are useful across a variety of employment settings" (p. 700). Thus, for studies using the composite approach, there is a risk that the selected individual content items will not completely tap the content domain of what is valued for a given employee. Measuring employees' evaluations of several content items and then taking an average (which gives every content item the same weight) may not accurately reflect individuals' cognitive evaluation of the contract breach and thus fail to accurately predict their emotions, attitude, and individual effectiveness. Therefore, we hypothesize the following.

*Hypothesis 4:* Breach measured by a global approach has a stronger relationship with work outcomes than breach measured by a composite approach.

### *Transactional and Relational Exchanges*

As noted above, a composite measure of breach uses content-specific items, and the contents can be categorized into two types of contracts: transactional content and relational content (Rousseau, 1990). *Transactional* content refers to specific, monetizable exchanges over a limited period of time (e.g., obligations about high pay and merit pay), whereas *relational* content refers to long-term exchanges that maintain the employee–employer relationship (e.g., obligations about personal support and a meaningful job; Robinson, Kratz, & Rousseau, 1994). Although there is some ambiguity regarding the nature of some specific content items (e.g., training, see Coyle-Shapiro & Kessler, 2000), these two dimensions were widely used in many studies (e.g., Kickul, Lester, & Finkl, 2002; Robinson & Morrison, 1995), making a comparison possible.

To some extent, employment can be viewed as an economic transaction between employers and employees. Providing transactional rewards such as pay and wages is usually seen as the bottom-line obligation of employers and is an essential component of the psychological contract. Employers' failure to deliver such extrinsic inducements will be most likely to cause immediate and extreme reactions from employees. In contrast, relational inducements are generally less tangible and are usually seen as extra rewards (in addition to transactional rewards) from the job. Although relational rewards can be highly desirable to employees, they usually understand that fulfillment is more unpredictable than transactional rewards. Employees may attribute the breach on relational contents of the psychological contract to miscommunication or bad luck rather than a deliberate betrayal on the part of their employer (Robinson & Morrison, 1995) and therefore react less strongly to breach. Therefore, we predict that breach of the transactional content of the psychological contract, in comparison to the relational content, will have a more negative impact on employees' reactions.

*Hypothesis 5:* Compared with breach of the relational content of the psychological contract, breach of the transactional content has stronger relationships with work outcomes.

### *Method*

#### *Literature Search*

We used a number of methods to identify studies for inclusion in our meta-analysis. First, we conducted a computerized bibliographic search of the *Academic Elite*, *Business Source Elite*, *PsycInfo*, and *Google Scholar*

using the term “psychological contract” for published studies on this topic up to April 2006. Because an electronic search with specific keywords may sometimes miss relevant studies (Stewart & Roth, 2004), we also conducted a manual search of journals that regularly publish psychological contract research such as *Academy of Management Journal*, *Journal of Applied Psychology*, *Personnel Psychology*, and *Journal of Organizational Behavior* from January 1989 to April 2006. We then requested papers from authors that had in the past 3 years presented papers on psychological contract breach at the Academy of Management or Society of Industrial and Organizational Psychology meetings. Finally, we contacted some researchers who are known as psychological contract scholars and requested their published or unpublished work and/or leads to other studies. The search results were entered into a reference management program (*Endnote8.0*) to identify and eliminate duplicate entries. We accumulated 389 studies through this process. In the screening process, publications in practitioner-oriented magazines or newspapers were eliminated. We also eliminated any study not written in English or Chinese due to the authors’ language abilities. Dissertations completed outside of North America were not available through *University Microfilms International*, but we downloaded two dissertations from a Chinese university. This process resulted in 111 studies retrieved in full text for further screening.

### *Criteria for Inclusion*

In order to be included in the meta-analysis a study had to meet three criteria: (a) The study had to report perceived contract breach. In empirical studies, psychological contract fulfillment has been used interchangeably with breach (except for the sign of the effect). We follow this practice and convert the fulfillment of psychological contract to breach by reversing the direction of the reported effect sizes. Some studies focused on perceived promises or obligations (e.g., Hui, Lee, & Rousseau, 2004) but did not measure breach/fulfillment and thus were not included. As we reviewed earlier, we did not include studies concerning unmet expectations; (b) a Pearson correlation coefficient (or equivalent) between psychological contract breach and one of the eight work-related outcomes (i.e., psychological contract violation, mistrust, job satisfaction, organizational commitment, turnover intentions, actual turnover, OCB, and in-role performance) must be reported; and (c) consistent with most studies that suggest the psychological contract is held by employees alone (Morrison & Robinson, 1997; Shore & Tetrick, 1994), we excluded any correlation that addressed the employer’s or organizational agent’s (e.g., supervisor’s) perspective of the employee’s psychological contract.

Upon closer examination of the remaining 111 studies, we eliminated an additional 10 studies, as they were theoretical papers. Furthermore,

three studies were eliminated because they were irrelevant to the psychological contract topic (e.g., decision quality). Finally, a total of 47 studies were eliminated because of the above three criteria. Hence, a total of 51 studies were included (including 12 dissertations, book chapters, conference papers, or working papers). Two studies were written in Chinese.<sup>1</sup>

### *Coding of Studies*

In an effort to ensure accuracy, the studies were coded by two of the authors independently. After a number of trials in the very early stage of coding, the intercoder agreement reached 90%. Any discrepancy was solved by a subsequent discussion between the coders. For one study, we contacted its authors to confirm a typo in the correlation table and used the correct number in the analysis.

Meta-analysis assumes that the effect sizes used are statistically independent. If two studies were based on the same data (e.g., Robinson, 1996; Robinson & Morrison, 1995) and both reported effect sizes on the same outcome variable (e.g., mistrust), we only used the effect size from the first published study. The second study was used only if it contained effect sizes between breach and a different relevant outcome (e.g., job satisfaction). If a study used multiple measures of breach or an outcome on the same sample (conceptual replication; e.g., Kickul et al., 2002), we averaged over measures and used the single result as the effect size for the study, except in a moderator analysis where the measure type is a proposed moderator (e.g., global measures vs. composite measures). If the same study design was carried out in multiple but independent organizations (full replication; e.g., Conway & Briner, 2002), results from those organizations were entered into the meta-analysis as independent samples (Hunter & Schmidt, 1990, p. 451).

Because many studies used the term *breach* and *violation* interchangeably, we used our set of working definitions and read the item wordings rather than relying on authors' labels to guide our coding. Violation was represented by a variety of emotions, such as anxiety, depression, frustration, and negative affect.

For studies that used a breach measure composing multiple items, most studies averaged the items and reported a single score of psychological contract breach (e.g., Coyle-Shapiro & Kessler, 2000; Robinson & Morrison, 1995; Robinson & Rousseau, 1994). However, three studies (Cassar, 2001; Lambert, Edwards, & Cable, 2003; Lester & Kickul, 2001)

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<sup>1</sup> The detailed list of included studies and their characteristics is available from the first author upon request.

reported correlations between individual content items and outcomes separately without calculating an overall average. We averaged such individual correlations for each of the three studies.

### *Statistical Procedures*

The meta-analysis was conducted based on the random-effects methods of Hunter and Schmidt (1990). The sample-weighted mean uncorrected correlation ( $\bar{r}$ ) was reported. We corrected each primary correlation for attenuation due to measurement error in both the predictor and criterion, and then we calculated the sample-weighted means of these corrected correlations as the estimated population correlation ( $\hat{\rho}$ ). In a few cases when the reliability information was not reported, we used the mean of the reliabilities reported in other studies included in the meta-analysis. No attempt was made to correct for range restriction because we did not have the data that would have made this correction possible (e.g., population means and standard deviations).

Besides the point estimates, we also report the 95% confidence intervals and 90% credibility intervals around the estimated population correlations. The confidence interval is based on the uncorrected standard error of the mean effect size. The credibility interval is based on the corrected standard deviation and provides an estimate of the variability of the individual effect sizes across studies. Thus, confidence intervals estimate variability in the mean effect size and credibility intervals estimate variability in the individual effect sizes across studies (Whitener, 1990). We also calculated the  $Q$  statistic (Hunter & Schmidt, 1990, p. 151) to assess the existence of potential moderators. The  $Q$  statistic is distributed approximately as a chi-square, and a significant  $Q$  indicates considerable heterogeneity in the effect sizes across studies. We use the  $z$ -score as a critical ratio (Hunter & Schmidt, 1990, p. 438) in comparing the mean correlations of different moderator categories. A significant  $z$ -score indicates that there is a difference in the effect size across moderator categories, and the moderating effect exists. Because the direction of the difference is theoretically specified, we conduct a one-tailed  $z$ -test.

Finally, we report the fail safe  $k$  to address the file drawer problem. Due to literature search limitations, some empirical studies may be missing and not included in the meta-analysis. A fail safe  $k$  is the number of studies with an overall null effect that is needed to make the significant level of the estimated true effect size down to "just significant" (Hunter & Schmidt, 1990). The larger the fail safe  $k$ , the less likely that the result will change due to missing studies.

*SEM for Model Testing*

Combining meta-analytically derived matrices and *SEM* for theory testing was advocated by Viswesvaran and Ones (1995) and Shadish (1996), and is becoming a common practice (e.g., Bhaskar-Shrinivas, Harrison, Shaffer, & Luk, 2005; Harrison et al., 2006). To produce the input correlation matrix for *SEM*, a total of 36 off-diagonal cells (correlations) need to be filled. Besides the eight meta-analytic correlations between breach and outcomes reported in this study, we referred to seven published meta-analyses and retrieved 18 meta-analytic correlations between outcomes. Viswesvaran and Ones indicated that missing cells in the matrix are a common problem. Following their suggestion, we performed separate meta-analyses using a subset of primary studies and other relevant empirical studies to obtain 10 meta-analytic correlations.

The sample sizes of each cell were different, and we followed the recommendation of Viswesvaran and Ones to use the harmonic mean ( $n = 1,838$ ). We used LISREL 8 (Jöreskog & Sörbom, 1993) to perform the *SEM* with maximum likelihood as the estimation method. In the structural models, breach was represented by a single indicator; affect was represented by violation and mistrust; attitude was represented by turnover intentions, (low) job satisfaction, and (low) organizational commitment; and individual effectiveness was represented by actual turnover, (low) OCB, and (low) in-role performance. Because breach is a negative event, we set affect, attitude, and individual effectiveness in negative directions so that the path loadings for the relations between breach and these outcomes would be expected to be positive.

Besides chi-square, we reported GFI, NFI, CFI, SRMR, and RMSEA as fitness indices. It is typically assumed that GFI, NFI, and CFI  $\geq .90$ , RMSEA  $\leq .10$ , and SRMR values  $\leq .06$  are indicators of a good fit to the data (e.g., Bentler, 1990; Kelloway, 1998; Steiger, 1990).

*Measurement Model*

Before running tests for the theoretical models, we first performed a test of the measurement model. The results showed marginally acceptable fit of the proposed four-factor model:  $\chi^2 = 527.55$ ,  $df = 22$ ,  $p < .01$ ; GFI = .94; CFI = .95; SRMR = .05; RMSEA = .11. We compared this model to a three-factor model in which the affect factor and attitude factor were combined because these two factors are quite subjective and usually self-reported. The fitness indices for the four-factor model were superior to those of the three-factor model ( $\Delta\chi^2 = 152.53$ ,  $\Delta df = 3$ ,  $p < .01$ ). This suggests that affect and attitude are unique concepts. The

four-factor model was also superior to a single-factor model ( $\Delta\chi^2 = 5,210.86$ ,  $\Delta df = 6$ ,  $p < .01$ ). These results indicate that the variances in those variables were not primarily from common method variance.

### *Results*

#### *Hypotheses 1–3: Main Effects of Breach on Specific Outcomes*

Table 1 shows the correlations between psychological contract breach and the outcomes. The meta-analytic results show that breach is strongly correlated with psychological contract violation ( $\hat{\rho} = .52$ ) and mistrust toward management ( $\hat{\rho} = .65$ ). The confidence intervals of such affective reaction outcomes excluded zero, and the fail safe  $k$  were relatively large (55 and 86, respectively), which means the results are not likely to change with missing studies. Thus, Hypothesis 1a and Hypothesis 1b were supported: Breach is positively related to feelings of violation and mistrust. Breach also is strongly correlated with job satisfaction ( $\hat{\rho} = -.54$ ), organizational commitment ( $\hat{\rho} = -.38$ ), and turnover intentions ( $\hat{\rho} = .42$ ). The confidence intervals of these attitudinal outcomes excluded zero and the fail safe  $k$  were large. Hence, Hypothesis 2a, Hypothesis 2b, and Hypothesis 2c were supported. Breach is negatively related to job satisfaction and organizational commitment, and positively related to turnover intentions. As for individual effectiveness, breach was negatively correlated with two behavioral outcomes: OCB ( $\hat{\rho} = -.14$ ) and in-role performance ( $\hat{\rho} = -.24$ ). The confidence intervals excluded zero, and the fail safe  $k$  were also relatively large. Thus, Hypothesis 3b and Hypothesis 3c were supported: Breach is negatively related to OCB and in-role performance. For actual turnover, however, the estimated true correlation was close to zero ( $\hat{\rho} = .06$ ), and its confidence interval included zero, which suggests that breach is not associated with actual turnover. Therefore, Hypothesis 3a was not supported.

The credibility interval was relatively wide and the  $Q$  statistic was significant for every outcome variable, indicating considerable heterogeneity across studies and the necessity to explore possible moderators.

#### *Models A–C: Theoretical Model Testing*

As we mentioned before, the set of bivariate correlations between breach and specific outcomes cannot depict theoretical relationships among those variables. Based on AET, we proposed a theoretical model (i.e., Model A) and compared it with two alternative models (i.e., Models B and C). We also included the null model (Model D) as a comparison. The meta-analyzed correlation matrix used to test the theoretical models is



TABLE 1  
*Meta-Analysis Results of the Main Effect of Psychological Contract Breach*

Work outcomes	<i>k</i>	<i>N</i>	$\bar{r}$	$\hat{\rho}$	SD $\hat{\rho}$	<i>Q</i>	95% CI		90% CRI		Fail safe <i>k</i>
							Lower	Upper	Lower	Upper	
Affect											
Violation	11	4,027	.43	.52	.18	133.30**	.41	.62	.25	.78	55
Mistrust	9	1,536	.53	.65	.14	144.94**	.46	.83	.23	1.00	86
Attitude											
Job satisfaction	28	14,252	-.45	-.54	.26	246.54**	-.59	-.49	-.75	-.32	205
Organizational commitment	20	12,523	-.32	-.38	.13	172.20**	-.43	-.32	-.58	-.18	102
Turnover intentions	22	6,268	.34	.42	.15	109.82**	.36	.49	.19	.65	80
Individual effectiveness											
Actual turnover	5	730	.05	.06	.18	20.17**	-.12	.23	-.21	.32	3
OCB	21	12,662	-.11	-.14	.09	69.74**	-.18	-.10	-.28	-.02	51
In-role performance	16	3,504	-.20	-.24	.11	32.11**	-.29	-.18	-.37	-.11	56

*Note.*  $\bar{r}$  = average observed effect size;  $\hat{\rho}$  = estimated population effect size, after correcting for measurement error in both the predictor and the criterion; SD $\hat{\rho}$  = standard deviation of the estimated population effect size; *k* = number of studies; *N* = total sample size; CI = confidence interval; CRI = credibility interval. The same for the following tables.  
 \*\**p* < .01, \**p* < .05.

TABLE 2  
*Meta-Analytic Correlation Matrix*

	1	2	3	4	5	6	7	8
1. Breach								
<i>k</i> studies								
<i>N</i> total observations								
2. Violation	.52 <sup>a</sup>							
<i>k</i> studies	11							
<i>N</i> total observations	4,017							
3. Mistrust	.65 <sup>a</sup>	.71 <sup>b</sup>						
<i>k</i> studies	9	2						
<i>N</i> total observations	1,536	275						
4. Job satisfaction	-.54 <sup>a</sup>	-.68 <sup>b</sup>	-.65 <sup>d</sup>					
<i>k</i> studies	28	4	34					
<i>N</i> total observations	14,252	2,276	10,631					
5. Org. commitment	-.38 <sup>a</sup>	-.60 <sup>b</sup>	-.59 <sup>d</sup>	.60 <sup>h</sup>				
<i>k</i> studies	20	4	40	112				
<i>N</i> total observations	12,523	2,226	9,676	39,187				
6. Turnover intention	.42 <sup>a</sup>	.62 <sup>b</sup>	.47 <sup>d</sup>	-.58 <sup>i</sup>	-.54 <sup>j</sup>			
<i>k</i> studies	22	4	17	88	51			
<i>N</i> total observations	6,268	2,303	3,297	35,494	13,829			
7. Actual turnover	.06 <sup>a</sup>	.15 <sup>b</sup>	.12 <sup>b</sup>	-.19 <sup>g</sup>	-.22 <sup>h</sup>	.38 <sup>e</sup>		
<i>k</i> studies	5	4	2	67	66	71		
<i>N</i> total observations	730	1,314	289	24,566	26,296	63,232		
8. OCB	-.14 <sup>a</sup>	-.28 <sup>b</sup>	-.21 <sup>d</sup>	.28 <sup>i</sup>	.25 <sup>i</sup>	-.30 <sup>b</sup>	-.22 <sup>h</sup>	
<i>k</i> studies	21	4	12	32	42	4	5	
<i>N</i> total observations	12,662	2,464	3,971	16,348	10,747	888	578	
9. Performance	-.24 <sup>a</sup>	-.25 <sup>b</sup>	-.17 <sup>d</sup>	.30 <sup>j</sup>	.18 <sup>r</sup>	-.26 <sup>b</sup>	-.15 <sup>h</sup>	.23 <sup>h</sup>
<i>k</i> studies	16	5	21	312	87	3	72	24
<i>N</i> total observations	3,504	819	5,686	54,471	20,973	683	25,234	9,912

<sup>a</sup> = from our meta-analysis.

<sup>b</sup> = from a separate meta-analysis.

<sup>d</sup> = from Dirks and Ferrin (2002)

<sup>g</sup> = from Griffeth, Hom, and Gaertner (2000)

<sup>h</sup> = from Harrison, Newman, and Roth (2006)

<sup>j</sup> = from Judge, Thoreson, Bono, and Patton (2001)

<sup>i</sup> = from Lepine, Erez, and Johnson (2002)

<sup>r</sup> = from Riketta (2002)

<sup>t</sup> = from Tett and Meyer (1993)

shown in Table 2. Although some cells of violation were based on a small number of studies, it is noteworthy that the pattern of correlations between violation and other variables was quite similar to the correlations between mistrust and other variables, which may help alleviate concerns about the small number of studies. The path coefficients and fitness indices of each model are shown in Table 3.

TABLE 3  
*Path Estimates and Fit Indices for Structural Equation Models*

Estimated path and model statistics	Model A	Model B	Model C	Model D
Estimated path <sup>a</sup>				
Breach–Affect	.58**	.59**	.52**	
Affect–Attitude	.77**	.84**		
Attitude–Individual Effectiveness	.36**	.43**		
Breach–Attitude		–.06**	.43**	
Breach–Individual Effectiveness		–.05**	.12**	
Model statistics				
$\chi^2$	617.71**	578.65**	1,669.58**	3,418.52**
<i>df</i>	25	23	25	28
GFI	.93	.93	.83	.71
CFI	.95	.95	.83	.68
NFI	.95	.95	.83	.68
SRMR	.05	.05	.16	.32
RMSEA	.11	.12	.19	.26

*Note.* GFI = goodness-of-fit index; CFI = comparative fit index; NFI = normed fit index; SRMR = standardized root mean square residual; RMSEA = root-mean-square error of approximation.

<sup>a</sup>Affect, Attitude, and Individual Effectiveness in the models are all negative in nature.

\*\* $p < .01$ ,  $n = 1,838$ .

Model A had acceptable fitness indices ( $\chi^2 = 617.71$ ,  $df = 26$ ,  $p < .01$ ; GFI = .93, CFI = .95, NFI = .95, SRMR = .05, RMSEA = .11). Model B did statistically fit the data better than Model A ( $\Delta\chi^2 = 39.06$ ,  $\Delta df = 2$ ,  $p < .01$ ). However, the gain was quite modest, the coefficients of the two newly added direct paths were close to zero (–.05 and –.06, respectively). Nevertheless, the critical point is that in both models affect mediates the effects breach has on work attitude and individual effectiveness. Model C was not nested with Model A, but based on comparisons made on other indices (c.f., Harrison et al., 2006), it seemed that Model C was worse than Model A on all fitness indices. It is unlikely that breach has only direct effects on each outcome. Model D seemed worse than any other model, suggesting that there does exist some relationships among those latent variables. In sum, the *SEM* results supported affect as a mediator between breach and attitude and individual effectiveness.

#### *Hypotheses 4–6: Moderation Effects*

Table 4 shows the results of the moderation tests of type of breach measures. There were less than three studies reporting correlations between global breach and mistrust and actual turnover. Thus, we were only

TABLE 4  
*Moderation Test: Measure Types of Psychological Contract Breach*

Work outcomes <sup>a</sup>	k	N	$\bar{r}$	$\hat{\rho}$	SD $\hat{\rho}$	Q	z <sup>b</sup>	95% CI		90% CRI	
								Lower	Upper	Lower	Upper
Violation							1.65*				
Global breach	7	3,024	.47	.56	.16	97.55**		.43	.69	.31	.81
Composite breach	4	2,447	.38	.46	.03	4.16		.40	.52	.46	.46
Job satisfaction							2.99**				
Global breach	14	4,173	-.52	-.65	.12	87.72**		-.73	-.57	-.83	-.47
Composite breach	17	12,141	-.44	-.52	.13	178.77**		-.58	-.47	-.72	-.32
Organizational commitment							3.81**				
Global breach	7	3,404	-.40	-.50	.07	27.10**		-.57	-.42	-.58	-.42
Composite breach	14	10,664	-.30	-.35	.12	128.01**		-.41	-.29	-.53	-.16
Turnover intentions							1.49				
Global breach	10	3,519	.37	.48	.14	46.77**		.40	.57	.27	.69
Composite breach	13	3,919	.31	.38	.17	76.89**		.30	.48	.15	.63
OCB							1.76*				
Global breach	7	2,979	-.16	-.19	.07	9.70		-.23	-.15	-.25	-.13
Composite breach	15	4,633	-.07	-.09	.19	118.32**		-.19	.02	-.39	.21
In-role performance							.97				
Global breach	6	1,151	-.22	-.26	.08	4.07		-.35	-.18	-.26	-.26
Composite breach	9	1,481	-.17	-.20	.14	24.00**		-.30	-.10	-.38	-.03

Note.<sup>a</sup> Only five outcomes had three or more studies in both categories for the comparison.

<sup>b</sup> z-test is one-tailed. \*\*  $p < .01$ , \*  $p < .05$ .

able to test the moderator effect for the other six outcomes. Global breach measures had a higher correlation than composite breach measures with the four outcomes, violation ( $z = 1.65, p < .05$ ), job satisfaction ( $z = 2.99, p < .01$ ), organizational commitment ( $z = 3.81, p < .01$ ), and OCB ( $z = 1.76, p < .05$ ), providing evidence of the moderating effect of type of breach measure. For turnover intentions and in-role performance, global measures also had higher correlations than composite measures, but the difference was not statistically significant. These results provided partial support for Hypothesis 4. Global measures of breach had larger effect sizes than composite measures for most outcomes.

Table 5 shows the results of the moderation test of the content of the psychological contract breach. Again, only five outcomes have three or more studies in both categories to make the comparison possible. For organizational commitment, transactional breach had a statistically larger effect size than relational breach ( $z = 3.70, p < .01$ ) as we predicted. However, transactional breach had statistically smaller effect sizes than relational breach on job satisfaction ( $z = 5.69, p < .01$ ), turnover intentions ( $z = 2.42, p < .01$ ), and OCB ( $z = 5.04, p < .01$ ), which were the opposite of our prediction. For in-role performance, transactional breach had a smaller effect size than relational breach, but the difference was not statistically significant. In sum, Hypothesis 5 was generally not supported.

### *Discussion*

To our knowledge, this study represents the first attempt of a meta-analytic review of the empirical psychological contract research. By quantitatively synthesizing previous empirical findings from a large number of studies of many different contexts, our study confirms the important role of the psychological contract in understanding workplace emotions, attitudes, and behaviors, and highlights directions for future research.

#### *Breach and Outcomes*

Our results show that psychological contract breach does have a significant impact on almost all work-related outcomes. These findings support the traditional wisdom that the psychological contract is an important concept in understanding the employment relationship. When compared with the impact of met expectations shown in a previous meta-analysis (Wanous, Poland, Premack, & Davis, 1992), breach had larger effect sizes in magnitude on job satisfaction (.54 vs. .39), turnover intentions (.42 vs. .29), and in-role performance (.24 vs. .11). It provides further evidence that breach and (un)met expectations are unique concepts, with breach being a stronger predictor of workplace outcomes. Future research and

TABLE 5  
Moderation test: Content of the Psychological Contract Breach

Work outcomes <sup>a</sup>	k	N	$\bar{r}$	$\hat{\rho}$	SD $\hat{\rho}$	Q	$z^b$	95% CI		90% CRI	
								Lower	Upper	Lower	Upper
Job satisfaction	3	7,335	-.38	-.44	.02	1.80	5.69**	-.47	-.40	-.44	-.44
Transactional breach	3	7,335	-.46	-.53	.02	4.47		-.57	-.49	-.55	-.51
Organizational commitment	3	7,518	-.30	-.34	.01	.38	3.70**	-.38	-.31	-.34	-.34
Transactional breach	3	7,518	-.24	-.27	.04	6.32*		-.32	-.22	-.31	-.23
Turnover intentions	3	570	.16	.17	.02	.12	2.42**	.05	.30	.17	.17
Transactional breach	3	570	.30	.33	.11	5.55		.18	.48	.20	.46
Relational breach	3	570	.30	.33	.11	5.55		.18	.48	.20	.46
OCB	6	7,783	-.03	-.05	.07	21.05**	5.04**	-.10	.01	-.14	.04
Transactional breach	6	7,783	-.17	-.23	.06	18.48**		-.28	-.17	-.30	-.15
Relational breach	6	7,783	-.17	-.23	.06	18.48**		-.28	-.17	-.30	-.15
In-role performance	4	704	-.17	-.19	.10	5.41	.67	-.32	-.07	-.27	-.12
Transactional breach	4	704	-.23	-.26	.18	22.91**		-.47	-.05	-.53	.01
Relational breach	4	704	-.23	-.26	.18	22.91**		-.47	-.05	-.53	.01

Note: <sup>a</sup>Only five outcomes had three or more studies in both categories for the comparison.

<sup>b</sup> $z$ -test is one-tailed. \*\*  $p < .01$ , \*  $p < .05$ .

managerial practices should continue to focus on employees' perceptions of the organization's promises and fulfillment of such promises.

A major contribution of this meta-analysis is that we tested the sequential process of the effect of breach on outcomes. With the rapid accumulation of empirical evidence in the last 2 decades, we believe AET offers a more comprehensive theoretical framework when examining the consequences of breach by incorporating affective reactions into the study of the psychological contract. Consistent with AET, the results supported the central mediating role of affective reactions. It showed that breach can be viewed as an affective event, and affective reactions (including perceived violation and mistrust toward management) are the proximal consequences of breach. In turn, affective reactions mediate the effects of breach on more distal attitudinal and effectiveness outcomes.

Consistent with AET, our results demonstrate that negative emotions are a likely consequence of breach. Not only do negative emotions incur direct costs (such as health expenses) but also incur indirect costs reflected in employees' negative attitudes and behaviors. We encourage future studies that integrate emotions and psychological contract breach, given the strong relation between breach and affect found in this meta-analysis. Besides the theoretical implication, we believe that the technical distinction between breach and violation is important. Morrison and Robinson (1997) differentiated the concept of breach (i.e., perceived discrepancy) and violation (i.e., emotional reactions) and explicitly indicated that violation is an immediate consequence of breach. Although we observed that some researchers still use these two terms synonymously, recently more and more scholars are adopting the conceptual distinctions between breach and violation.

It is especially interesting that the effect size of mistrust is even larger than that of perceived violation. In retrospect, the strong effect size between breach and mistrust makes sense because of the uncertainties involved in social exchange relationships. Social exchanges require the focal person to trust the other party to fulfill their obligations (Blau, 1964). However, it is not always possible to guarantee the return of a favor. When the other party fails to fulfill their promises, the focal person's immediate response is mistrust, which would further produce negative attitudes and behaviors. Young and Daniel (2003) criticized past research for ignoring the role of affective trust. They showed that trust/mistrust can actually be highly emotional and subjective instead of calculative, especially after experiencing a negative event. Because psychological contract breach is a negative event for many employees, the affective component of mistrust may outweigh rational considerations in decision making and other cognitive processes (e.g., Cohen, 2005). Compared with general emotions such as anger and sadness, mistrust implies feelings of betrayal and arousals for revenge,

and thus it is a more specific response to breach. Future research should examine the role of trust/mistrust in this context. For example, besides being an outcome of breach, perhaps mistrust may also prompt the focal person to scan the environment for more instances of breach.

The only nonsignificant consequence of breach was on actual turnover. It seems that although employees respond to psychological contract breach with negative attitudes and intentions to quit, they may not necessarily withdraw from the organization. Such a weak effect may be due to the high cost of actual withdrawal. Rousseau (2000) observed that “quitting one’s job can be costly even in a relatively mobile society” (p. 269), and turnover is usually a realistic choice for employees only after receiving alternative job offers. Future research should examine whether these results could be due to the influence of time (turnover is collected at a later time point—often 1 year later) or reliance on a dichotomous measure, particularly because this conclusion is only based on five studies. Nonetheless, there is still cause for concern for managers. By staying rather than leaving, employees with strong negative affective reactions and attitudes can still do harm to the organization by reducing their work efforts and negatively affecting the morale of coworkers.

#### *Potential Moderators for Breach–Outcome Relationships*

We found considerable heterogeneity across studies for nearly all outcome variables, and the moderator tests helped in explaining some of the heterogeneity. The type of breach measure was a moderator for four of the six outcomes we examined. Studies using global measures that were not content specific had larger effect sizes than studies using a composite measure with content specific items. There are three possible reasons for such a moderation effect. First, global measures do not restrict the content of the psychological contract to certain items, thus subjects are able to access the full domain of the psychological contract content. Second, subjects may unconsciously weigh the importance and salience of each item when assessing global breach. In contrast, composite measures not only limited respondents’ choice of content items but also assumed the same weight for every content item, which may bias the reported breach in an unpredictable way. Third, composite measures sometimes use a difference score approach that has been widely criticized because of its poor reliability and ambiguity of the scales (cf. Irving & Meyer, 1999), whereas all global measures are based on subjective evaluation of the extent of breach. It is likely that the psychometric quality of difference score measures reduced composite measures’ validity in predicting employees’ reactions. In sum, we believe that global measures of breaches have advantages over



composite measures when a specific type of content (e.g., pay) is not the research focus.

The content of the psychological contract acted as a moderator but often in unexpected ways. Although transactional breach had a larger effect on organizational commitment than relational breach, as hypothesized, it did not for job satisfaction, turnover intentions, and OCB. There may be three explanations for such an opposite effect. First, employers' transactional obligations such as pay level and benefits package are often covered in the written employment contract and thus legally binding, making breach less likely. The limited variance in transactional breach in empirical studies may lead to its smaller effect size in the meta-analysis. Second, Bunderson (2001) indicated work ideologies can shape psychological contracts and influence subsequent reactions to breach. It is possible that employees from different occupations have different psychological contracts and react to breach in different ways. Third, employees may react to transactional breach in ways not captured in the outcomes examined in this study. For example, employees may "vent" by suing the employer instead of, for example, quitting or reducing their OCB. The outcomes in this meta-analysis do not include lawsuits because they have been rarely studied. Furthermore, these results should be interpreted with caution because the small number of studies used to test this relation (e.g., three studies for affective organizational commitment and four for in-role performance) might make the results unstable.

### *Implications for Practice*

This meta-analytic study has significant practical consequences for organizations. First, managers should not provide unrealistic promises during recruitment, socialization, and routine work interactions. Such promises may have motivational effects in the short term, but, if afterward employees perceive a breach in the psychological contract, both the employees and the organization may suffer in the long term. Second, managers can alleviate the negative impact of breach by paying closer attention to employees' emotional states and putting out the "fire" before negative behaviors occur. One way this can be accomplished is by using counseling programs especially designed to deal with employees' emotions such as anger, stress, and depression (Smits & Pace, 1992). Another possible way to deter negative reactions is by explaining the reasons for unfulfilled promises. Research has found that management can avoid negative emotions toward the organization by listening to their employees' concerns and explaining with evidence how the situation is out of their direct control (Zottoli, 2003). Third, managers should carefully assess their employees' needs and make sincere efforts at fulfilling their obligations

as long as the psychological contract held by employees is reasonable. Even partial fulfillment may help rebuild employees' confidence in management. If the organization consistently refuses to fulfill its promises, no matter what explanations it provides, negative work outcomes will be inevitable.

### *Limitations*

A major limitation of this study is that despite the popularity of psychological contract research in recent years, there were only a small number of studies to test some hypotheses. Furthermore, the majority of studies use self-reported outcomes instead of other-reported outcomes, and very few studies have compared breach on transactional and relational aspects of the psychological contract.

A second limitation is that *SEM* cannot completely address the causal relationships among concepts. It is possible that reverse causal relationships for the proposed model exist. For example, individual effectiveness may influence attitude and affect, and negative emotional arousal may make employees more sensitive when scanning the environment and thus perceive more breach. Longitudinal design in primary studies can help clarify these causal relationships.

A last limitation is due to application of meta-analysis when there are only a limited number of studies in any one category. The problem is multiple moderating effects may be confounded, making it difficult to draw definitive conclusions when testing a single moderator. This further underscores the need for future research.

### *Suggestions for Future Research*

A meta-analysis not only summarizes past research but also highlights directions of future inquiry. One potentially fruitful avenue suggested by our meta-analysis is a continued focus on the measures of breach. As we reviewed earlier, besides global and composite measures, a third type of measure of breach is multiplying the breach magnitude by the importance of the content item. Although this measure provides an explicit weight by importance, the content is still predetermined by the researchers instead of the focal person, and the use of cross-product terms may suffer from poor reliability (Bohrnstedt & Marwell, 1978). Thus, we would assume such explicitly weighted measures will produce effect sizes lower than the effect sizes of global measures (i.e., implicitly weighted) but higher than the effect sizes of composite measures (i.e., not-weighted). We did not find a sufficient number of studies using the explicit weighting

to run a meaningful meta-analysis, but future research can test this possibility.

Another research area that could be exploited would be to expand the behavioral outcome measures. Farrell (1983) categorized behavioral reactions into four quadrants depending on whether the reaction is constructive (or destructive) and active (or passive): exit (including turnover), neglect (including reduced OCB and reduced performance), voice, and loyalty. To date, there has been very little attention to voice and loyalty. Voice is a constructive and active reaction. Besides potential litigation previously mentioned, employees could engage in voice by complaining both internally (e.g., to management or the union) and externally (e.g., to the media) in hope that the organization will pay attention to and correct the problem. Loyalty is defined as a good-will waiting or patience, and thus a constructive yet passive reaction. To our knowledge, loyalty in this sense has never been an expected outcome of breach in the psychological contract area. As long as voice and loyalty impact organizational well-being and performance, researchers should consider them when trying to understand the effects of breach.

Third, future research should consider individual differences, such as personality, when studying breach and its subsequent reactions. For example, personality may influence employee detection of breach, attributions of the cause, and behavioral responses selected to restore balance in the exchange. Raja et al. (2004) is an exemplar study as it examined the moderating role of Extraversion, Conscientiousness, Neuroticism, equity sensitivity, self-esteem, and locus of control in the relationship between breach and outcomes. Other personality variables such as Agreeableness might also be relevant. For example, highly agreeable employees are more easy-going and forgiving, and thus less likely to have a confrontation with the employer or its agents (e.g., a supervisor) when they perceive unfulfilled promises.

### *Conclusions*

In sum, the overall results of this meta-analysis support the important role that psychological contract breach has in predicting employee attitude and individual effectiveness. Although the empirical research on the psychological contract is in its infancy stage (Rousseau & Tijoriwala, 1998), it is clear that breach has a strong and significant effect on a number of organizationally relevant outcomes. Our results show breach has a significant impact on affective reactions, which in turn affect important work attitudes and behaviors, as predicted by affective event theory. This

meta-analysis shows there are many unanswered questions that deserve future research attention.

## REFERENCES

References marked with an asterisk indicate studies included in the meta-analysis.

- \*Agee J. (2000). *Understanding psychological contract breach: An examination of its direct, indirect, and moderated effects*. Unpublished doctoral dissertation, State University of New York at Albany.
- Ajzen I. (1988). *Attitudes, personality, and behavior*. Homewood, IL: Dorsey Press.
- Ajzen I, Fishbein M. (1980). *Understanding attitudes and predicting social behavior*. Englewood Cliffs, NJ: Prentice-Hall.
- Argyris C. (1960). *Understanding organizational behavior*. Homewood, IL: Dorsey Press.
- Ashkanasy NM, Daus CS. (2002). Emotion in the workplace: The new challenge for managers. *Academy of Management Executive*, 16, 76–86.
- Bagozzi RP. (1978). The construct validity of the affective, behavioral, and cognitive components of attitude by analysis of covariance structures. *Multivariate Behavioral Research*, 13, 9–31.
- Barclay LJ, Skarlicki DP, Pugh SD. (2005). Exploring the role of emotions in injustice perceptions and retaliation. *Journal of Applied Psychology*, 90, 629–643.
- Becker TE, Billings RS, Eveleth DM, Gilbert NL. (1996). Foci and bases of employee commitment: Implications for job performance. *Academy of Management Journal*, 39, 464–484.
- Bentler PM. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, 107, 238–246.
- Bhaskar-Shrinivas P, Harrison DA, Shaffer MA, Luk DM. (2005). Input-based and time-based models of international adjustment: Meta-analytic evidence and theoretical extensions. *Academy of Management Journal*, 48, 259–281.
- Blau P. (1964). *Exchange and power in social life*. New York: Wiley.
- Bohmstedt GW, Marwell G. (1978). The reliability of products of two random variables. In Schuessler KF (Ed.), *Sociological methodology* (pp. 254–273). San Francisco: Jossey-Bass.
- Brecker SJ. (1984). Empirical validation of affect, behavior, and cognition as distinct components of attitude. *Journal of Personality and Social Psychology*, 47, 1191–1205.
- \*Bunderson JS. (2001). How work ideologies shape the psychological contracts of professional employees: Doctors' responses to perceived breach. *Journal of Organizational Behavior*, 22, 717–741.
- \*Cassar V. (2001). Violating psychological contract amongst Maltese public service employees: Occurrence and relationships. *Journal of Managerial Psychology*, 16, 194–208.
- \*Cavanaugh MA, Noe RA. (1999). Antecedents and consequences of relational components of the new psychological contract. *Journal of Organizational Behavior*, 20, 323–340.
- \*Chen M, Fang M. (2003). The impact of psychological contract breach on employees' work behavior: An example in high-tech industry. *Fu Jen Management Review (in Chinese)*, 11, 1–32.
- \*Cheung FYM. (2001). *The influence of work status on the work outcomes among part-time workers in the service industries of Hong Kong*. Unpublished master's thesis, Lingnan University, China.
- \*Chrobot-Mason DL. (2003). Keeping the promise: Psychological contract violations for minority employees. *Journal of Managerial Psychology*, 18, 22–45.

- \*Chubbs D. (2002). *Nurses' perceptions of the impact of health care reforms, psychological contract violation, restructuring and general job satisfaction, organization commitment, and intent to stay*. Unpublished doctoral dissertation, Memorial University of Newfoundland, Newfoundland, Canada.
- Cohen JD. (2005). The vulcanization of the human brain: A neural perspective on interactions between cognition and emotion. *Journal of Economic Perspectives*, 19, 3–24.
- \*Conway N, Briner RB. (2002). Full-time versus part-time employees: Understanding the links between work status, the psychological contract, and attitudes. *Journal of Vocational Behavior*, 61, 279–301.
- \*Coyle-Shapiro J, Conway N. (2005). Exchange relationships: Examining psychological contracts and perceived organizational support. *Journal of Applied Psychology*, 90, 774–781.
- \*Coyle-Shapiro J, Kessler I. (2000). Consequences of the psychological contract for the employment relationship: A large scale survey. *Journal of Management Studies*, 37, 903–930.
- Dasborough MT. (2006). Cognitive asymmetry in employee emotional reactions to leadership behaviors. *Leadership Quarterly*, 17, 163–178.
- \*Deery S, Iverson R, Walsh J. (2004). *Towards a better understanding of psychological contract breach: A study of non-professional employees*. Unpublished manuscript, University of London.
- \*Deery S, Iverson R, Walsh J. (2006). Toward a better understanding of psychological contract breach: A study of customer service employees. *Journal of Applied Psychology*, 91, 166–175.
- Dirks KT, Ferrin DL. (2002). Trust in leadership: Meta-analytic findings and implications for research and practice. *Journal of Applied Psychology*, 87, 611–628.
- Farrell D. (1983). Exit, voice, loyalty, and neglect responses to job dissatisfaction: A multi-dimensional scaling study. *Academy of Management Journal*, 26, 596–607.
- Forgas JP, George JM. (2001). Affective influences on judgments, decision making and behavior in organizations: An information processing perspective. *Organizational Behavior and Human Decision Processes*, 86, 3–34.
- \*Gakovic A, Tetrick LE. (2003a). Perceived organizational support and work status: A comparison of the employment relationships of part-time and full-time employees attending university classes. *Journal of Organizational Behavior*, 24, 649–666.
- \*Gakovic A, Tetrick LE. (2003b). Psychological contract breach as a source of strain for employees. *Journal of Business & Psychology*, 18, 235–246.
- \*George E. (2003). External solutions and internal problems: The effects of employment externalization on internal workers' attitudes. *Organization Science*, 14, 386–402.
- Greenberg J. (1990). Organizational justice: Yesterday, today, and tomorrow. *Journal of Management*, 16, 399–342.
- Griffeth RW, Hom PS, Gaertner S. (2000). A meta-analysis of antecedents and correlates of employee turnover: Update, moderator tests, and research implications for the next millennium. *Journal of Management*, 26, 463–488.
- Guzzo RA, Noonan KA, Elron E. (1994). Expatriate managers and the psychological contract. *Journal of Applied Psychology*, 79, 617–626.
- Harrison DA, Newman DA, Roth PL. (2006). How important are job attitudes? Meta-analytic comparisons for integrative behavioral outcomes and time sequences. *Academy of Management Journal*, 49, 305–326.
- Hui C, Lee C, Rousseau DM. (2004). Psychological contract and organizational citizenship behavior in China: Investigating generalizability and instrumentality. *Journal of Applied Psychology*, 89, 311–321.

- Hunter JE, Schmidt FL. (1990). *Methods of meta-analysis: Correcting error and bias in research findings*. Newbury Park, CA: Sage.
- Irving PG, Meyer JP. (1999). On using residual difference scores in the measurement of congruence: The case of met expectations research. *PERSONNEL PSYCHOLOGY*, 52, 85–95.
- Iverson RD, Buttigieg DM. (1999). Affective, normative and continuance commitment: Can the 'right kind' of commitment be managed? *Journal of Management Studies*, 36, 307–333.
- \*Johnson J, O'Leary-Kelly AM. (2003). The effects of psychological contract breach and organizational cynicism: Not all social exchange violations are created equal. *Journal of Organizational Behavior*, 24, 627–647.
- Jöreskog KG, Sörbom D. (1993). *LISREL 8: User's reference guide*. Chicago: Scientific Software International.
- Judge TA, Scott BA, Ilies R. (2006). Hostility, job attitudes, and workplace deviance: Test of a multilevel model. *Journal of Applied Psychology*, 91, 126–138.
- Judge TA, Thoreson CJ, Bono JE, Patton GK. (2001). The job satisfaction–job performance relationship: A qualitative and quantitative review. *Psychological Bulletin*, 127, 376–407.
- Kacmar KM, Andrews MC, Van Rooy DL, Steilberg RC, Cerrone S. (2006). Sure everyone can be replaced. . . but at what cost? Turnover as a predictor of unit-level performance. *Academy of Management Journal*, 49, 133–144.
- Katz D, Kahn R. (1978). *The social psychology of organizations* (2nd ed.). New York: Wiley.
- Kelloway EK. (1998). *Using LISREL for structural equation modeling: A researcher's guide*. Thousand Oaks, CA: Sage.
- \*Kickul J. (2001a). Promise made, promise broken: An exploration of employee attraction and retention practices in small businesses. *Journal of Small Business Management*, 39, 320–335.
- \*Kickul J. (2001b). When organizations break their promises: Employee reactions to unfair processes and treatment. *Journal of Business Ethics*, 29, 289–297.
- \*Kickul J, Lester SW, Belgio E. (2004). Attitudinal and behavioral outcomes of psychological contract breach: A cross-cultural comparison of the United States and Hong Kong Chinese. *International Journal of Cross Cultural Management*, 4, 229–252.
- \*Kickul J, Lester SW, Finkl J. (2002). Promise breaking during radical organizational change: Do justice interventions make a difference? *Journal of Organizational Behavior*, 23, 469–488.
- \*Kickul J, Zaper JA. (2000). Untying the knot: Do personal and organizational determinants influence entrepreneurial intentions? *Journal of Small Business and Entrepreneurship*, 57–77.
- Konovsky MA, Pugh SD. (1994). Citizenship behavior and social exchange. *Academy of Management Journal*, 37, 656–669.
- Kothandapani V. (1971). Validation of feeling, belief, and intention to act as three components of attitude and their contribution to prediction of contraceptive behavior. *Journal of Personality and Social Psychology*, 19, 321–333.
- \*Knights JA, Kennedy BJ. (2005). Psychological contract violation: Impacts on job satisfaction and organizational commitment among Australian senior public servants. *Applied HRM Research*, 10, 27–72.
- \*Lambert LS, Edwards JR, Cable DM. (2003). Breach and fulfillment of the psychological contract: A comparison of traditional and expanded views. *PERSONNEL PSYCHOLOGY*, 56, 895–934.

- \*Larwood L, Wright T, Desrochers S, Dahir V. (1998). Extending latent role and psychological contract theories to predict intent to turnover and politics in business organizations. *Group and Organization Management*, 23, 100–123.
- LeDoux JE. (1995). Emotion: Clues from the brain. *Annual Review of Psychology*, 46, 209–235.
- LePine JA, Erez A, Johnson DE. (2002). The nature and dimensionality of organizational citizenship behavior: A critical review and meta-analysis. *Journal of Applied Psychology*, 87, 52–65.
- \*Lemire L, Rouillard C. (2005). An empirical exploration of psychological contract violation and individual behaviour. *Journal of Managerial Psychology*, 20, 150–163.
- \*Lester SW, Kickul J. (2001). Psychological contracts in the 21st century: What employees value most and how well organizations are responding to these expectations. *Human Resource Planning*, 24, 10–21.
- \*Lester SW, Turnley WH, Bloodgood JM, Bolino MC. (2002). Not seeing eye to eye: Differences in supervisor and subordinate perceptions of and attributions for psychological contract breach. *Journal of Organizational Behavior*, 23, 39–56.
- Levinson H, Price C, Munden K, Mandl H, Solley C. (1962). *Men, management, and mental health*. Cambridge, MA: Harvard University Press.
- \*Lin S. (2003). *The relationship and the influence between human resource flexibility strategy in banking enterprises and psychological contract of employees*. Unpublished master's thesis (in Chinese), National Sun Yat-Sen University, Taiwan.
- \*Lo S, Aryee S. (2003). Psychological contract breach in a Chinese context: An integrative approach. *Journal of Management Studies*, 40, 1005–1020.
- Locke EA. (1969). What is job satisfaction? *Organizational Behavior and Human Performance*, 4, 309–336.
- Lum L, Kervin J, Clark K, Reid F, Sirola W. (1998). Explaining nursing turnover intent: Job satisfaction, pay satisfaction, or organizational commitment? *Journal of Organizational Behavior*, 19, 305–320.
- McAllister DJ. (1995). Affect- and cognition-based trust as foundations for interpersonal cooperation in organizations. *Academy of Management Journal*, 38, 24–59.
- McLean Parks J, Kidder DL, Gallagher DG. (1998). Fitting square pegs into round holes: Mapping the domain of contingent work arrangements onto the psychological contract. *Journal of Organizational Behavior*, 19, 697–730.
- Meyer J, Allen N. (1984). Testing the “side bet theory” of organizational commitment: some methodological considerations. *Journal of Applied Psychology*, 69, 372–378.
- Meyer JP, Allen NJ. (1991). A three-component conceptualization of organizational commitment. *Human Resource Management Review*, 1, 61–98.
- Migonac K, Herrbach O. (2004). Linking work events, affective states, and attitudes: An empirical study of managers' emotions. *Journal of Business and Psychology*, 19, 221–240.
- \*Montes SD, Irving PG. (2005). *Psychological contract breach: Assessing underlying assumptions*. Paper presented at the Academy of Management Conference, Honolulu, HI.
- Morrison EW, Robinson SL. (1997). When employees feel betrayed: A model of how psychological contract violation develops. *Academy of Management Review*, 22, 226–256.
- Organ DW. (1988). *Organizational citizenship behavior: The good soldier syndrome*. Lexington, MA: Lexington Books.
- \*Pearcy D. (1997). *Psychological contract violation: The impact of unfulfilled employer obligations on employee attitudes*. Unpublished doctoral dissertation, California School of Professional Psychology, Los Angeles.

- \*Raja U, Johns G, Ntalianis F. (2004). The impact of personality on psychological contracts. *Academy of Management Journal*, 47, 350–367.
- \*Restubog SL, Bordia P, Krebs S, Tang RL. (2005). *The role of leader–member exchange in the psychological contract breach–subordinates' performance relationship*. Paper presented at the Academy of Management Conference, Honolulu, HI.
- Riketta M. (2002). Attitudinal organizational commitment and job performance: A meta-analysis. *Journal of Organizational Behavior*, 23, 257–266.
- \*Robinson SL. (1995). Violation of psychological contracts: Impact on employee attitudes. In Tetrick LE, Barling J (Eds.), *Changing employment relations: Behavioral and social perspectives* (pp. 91–108). Washington DC: American Psychological Association.
- \*Robinson SL. (1996). Trust and breach of the psychological contract. *Administrative Science Quarterly*, 41, 574–599.
- Robinson SL, Kraatz MS, Rousseau DM. (1994). Changing obligations and the psychological contract: A longitudinal study. *Academy of Management Journal*, 37, 137–152.
- \*Robinson SL, Morrison EW. (1995). Psychological contracts and OCB: The effect of unfulfilled obligations on civic virtue behavior. *Journal of Organizational Behavior*, 16, 289–298.
- \*Robinson SL, Morrison EW. (2000). The development of psychological contract breach and violation: A longitudinal study. *Journal of Organizational Behavior*, 21, 526–546.
- \*Robinson SL, Rousseau DM. (1994). Violating the psychological contract: Not the exception but the norm. *Journal of Organizational Behavior*, 15, 245–259.
- Rosenberg MJ, Hovland CI. (1960). Cognitive, affective, and behavioral components of attitudes. In Hovland CI, Rosenberg MJ (Eds.), *Attitude organization and change* (pp. 1–14). New Haven, CT: Yale University Press.
- Rousseau DM. (1989). Psychological and implied contracts in organizations. *Employee Responsibilities and Rights Journal*, 2, 121–139.
- Rousseau DM. (1990). New hire perceptions of their own and their employer's obligations: A study of psychological contracts. *Journal of Organizational Behavior*, 11, 389–400.
- Rousseau DM. (1995). *Psychological contracts in organizations: Understanding written and unwritten agreements*. Thousand Oaks, CA: Sage.
- Rousseau DM. (2000). Psychological contracts in the United States: Diversity, individualism, and associability in the marketplace. In Rousseau DM, Schalk R (Eds.), *Psychological contracts in employment: Cross-national perspectives* (pp. 250–282). Thousand Oaks, CA: Sage.
- Rousseau DM, Tijoriwala SA. (1998). Assessing psychological contracts: Issues, alternatives and measures. *Journal of Organizational Behavior*, 19, 679–695.
- Rupp DE, Spencer S. (2006). When customers lash out: The effects of customer interactional injustice in emotional labor and the mediating role of discrete emotions. *Journal of Applied Psychology*, 91, 971–978.
- Schein EH. (1965). *Organizational psychology*. Englewood Cliff, NJ: Prentice Hall.
- Shadish WR. (1996). Meta-analysis and the exploration of causal mediating process: A primer of examples, methods, and issues. *Psychological Methods*, 1, 47–65.
- Shore LM, Tetrick LE. (1994). The psychological contract as an explanatory framework in the employment relationship. In Cooper C, Rousseau D (Eds.), *Trends in organizational behavior*, 1, (pp. 91–109). New York: Wiley.



- Shore LM, Tetrick LE, Taylor S, Shapiro JA-MC, Liden RC, Parks JM, et al L. (2004). The employee organization relationship: A timely concept in a period of transition. In Martocchio JJ (Ed.), *Research in personnel and human resource management*, 23, (pp. 291–370). Elsevier.
- Smits SJ, Pace LA. (1992). *The investment approach to employee assistance program*. Westport, CT: Quorum.
- \*Starnes B. (2004). *An analysis of psychological contracts in voluntarism and the influences of trust, job satisfaction, and organizational commitment*. Unpublished doctoral dissertation Auburn University Montgomery, Montgomery, Canada.
- Steiger JH. (1990). Structural model evaluation and modifications: An interval estimation approach. *Multivariate Behavioral Research*, 25, 173–180.
- Stewart WH, Roth PL. (2004). Data quality affects meta-analytic conclusions: A response to Miner and Raju (2004) concerning entrepreneurial risk propensity. *Journal of Applied Psychology*, 89, 14–21.
- \*Suazo MM. (2002). *An examination of antecedents and consequences of psychological contract breach*. Unpublished doctoral dissertation, University of Kansas.
- \*Sutton G, Griffin MA. (2004). Integrating expectations, experiences, and psychological contract violations: A longitudinal study of new professionals. *Journal of Occupational and Organizational Psychology*, 77, 493–514.
- Taylor SM, Tekleab AG. (2004). Taking stock of psychological contract research: Assessing progress, addressing troublesome issues, and setting research priorities. In Coyle-Shapiro JA—M, Shore LM, Taylor SM, Tetrick LE (Eds.), *The employment relationship: Examining psychological and contextual perspectives*. New York: Oxford University Press.
- \*Tekleab AG, Takeushi R, Taylor MS. (2005). Extending the chain between the relationships among organizational justice, social exchange, and employee reactions: The role of contract violations. *Academy of Management Journal*, 48, 146–157.
- \*Tekleab AG, Taylor MS. (2003). Aren't there two parties in an employment relationship? Antecedents and consequences of organization-employee agreement on contract obligations and violations. *Journal of Organizational Behavior*, 24, 585–608.
- Tett RP, Meyer JP. (1993). Job satisfaction, organizational commitment, turnover intention, and turnover: Path analyses based on meta-analytic findings. *PERSONNEL PSYCHOLOGY*, 46, 259–293.
- \*Thompson M, Heron P. (2004). *How the quality of the employment relationship matters for knowledge sharing and innovation*. Working paper, University of Oxford.
- \*Thompson M, Heron P. (2005). The difference a manager can make: Organizational justice and knowledge worker commitment. *International Journal of Human Resource Management*, 16, 383–404.
- \*Turnley WH, Bolino MC, Lester SW, Bloodgood JM. (2003). The impact of psychological contract fulfillment on the performance of in-role and organizational citizenship behaviors. *Journal of Management*, 29, 187–206.
- \*Turnley WH, Feldman DC. (1999). The impact of psychological contract violations on exit, voice, loyalty, and neglect. *Human Relations*, 52, 895–922.
- \*Turnley WH, Feldman DC. (2000). Re-examining the effects of psychological contract violations: Unmet expectations and job dissatisfaction as mediators. *Journal of Organizational Behavior*, 21, 25–42.
- Van Dyne L, Graham JW, Dienesch RM. (1994). Organizational citizenship behavior: Construct redefinition, measurement, and validation. *Academy of Management Journal*, 37, 765–802.

- Viswesvaran C, Ones DS. (1995). Theory testing: Combining psychometric meta-analysis and structural equations modeling. *PERSONNEL PSYCHOLOGY*, 48, 865–885.
- Wanous JP, Poland TD, Premack SL, Davis KS. (1992). The effects of met expectations on newcomer attitudes and behaviors: A review and meta-analysis. *Journal of Applied Psychology*, 77, 288–297.
- Webb JW. (1996). Links between emotional distress, deviant norms, and adolescent substance use: A mediational path model. Unpublished dissertation, Colorado State University, Fort Collins, Colorado.
- Weiss HM, Cropanzano R. (1996). Affective events theory: A theoretical discussion of the structure, causes and consequences of affective experiences at work. In Staw BM, Cummings LL (Ed.), *Research in organizational behavior: An annual series of analytical essays and critical reviews*, 18. (pp. 1–74). Elsevier Science/JAI Press.
- Whitener EM. (1990). Confusion of confidence intervals and credibility intervals in meta-analysis. *Journal of Applied Psychology*, 75, 315–321.
- Young L, Daniel K. (2003). Affectual trust in the workplace. *International Journal of Human Resource Management*, 14, 135–155.
- \*Zottoli MA. (2003). *Understanding the process through which breaches of the psychological contract influence feelings of psychological contract violation: An analysis incorporating causal, responsibility, and blame attributions*. Unpublished doctoral dissertation, Ohio State University.