

# An Under-Met and Over-Met Expectations Model of Employee Reactions to Merit Raises

John Schaubroeck  
Drexel University

Jason D. Shaw and Michelle K. Duffy  
University of Minnesota

Atul Mitra  
University of Northern Iowa

The authors developed a model of how raise expectations influence the relationship between merit pay raises and employee reactions and tested it using a sample of hospital employees. Pay-for-performance (PFP) perceptions were consistently related to personal reactions (e.g., pay raise happiness, pay-level satisfaction, and turnover intentions). Merit pay raises were strongly related to reactions only among employees with high raise expectations and high PFP perceptions. The interactive effects of under-met/over-met expectations and PFP perceptions were mediated by the extent to which participants saw the raise as generous and they were happy with the raises they received. The authors discuss the implications of these findings for expectation-fulfillment theories, merit pay research, and the administration of incentives.

*Keywords:* merit pay, pay raises, job attitudes, expectations, compensation

Recent surveys show that merit pay, permanent increases to base pay linked to individual performance ratings, remains the most popular monetary incentive plan (Chu, 2004; White, 2006). Researchers argue that merit pay can attract and retain high-performing employees, motivate individuals to perform better, and help organizations achieve their strategic goals (Lawler & Jenkins, 1992; Shaw, Duffy, Mitra, Lockhart, & Bowler, 2003). Despite their popularity and these purported benefits, the literature on merit pay plans paints an incomplete picture of the effects of raises on employee responses, and it also reveals several major problems with these systems. First, existing evidence indicates that there is only a modest relationship between merit and actual pay (e.g., see R. L. Heneman, 1992, for a comprehensive review), in part because of the difficulties in delivering a merit pay plan when performance measures are weak (Lawler & Jenkins, 1992). Second, Lawler and Jenkins (1992) have suggested that merit pay plans are often ineffective because managers are reluctant to make strong differentiations in performance ratings when these distinctions may anger employees. Third, faced with limited merit budgets, merit pay raises are often simply too small to make a difference (Mitra, Gupta, & Jenkins, 1997).

With these limitations in mind, it is perhaps not surprising that research shows considerable variability in terms of how individuals respond to their pay raises (Mitra et al., 1997)—a 5% raise may result in a positive reaction from one individual, a negative reaction from another, and an apathetic reaction from a third. In line with this, Williams, McDaniel, and Nguyen (2006) reported a very modest meta-analytic correlation of .08 between merit pay raises and pay-level satisfaction. The merit pay literature, however, provides little empirical evidence explaining the reasons for this variation. Understanding individual reactions to merit pay raises is important not only for theoretical reasons but also because of the high costs associated with administering merit pay. Because they are permanent additions to base pay, merit pay raises increase organizational wage bills dramatically over time. These direct costs are presumably offset by incentive effects that lead to higher employee performance (e.g., Jenkins, Mitra, Gupta, & Shaw, 1998) as well as positive attitudinal reactions to the raises (e.g., R. L. Heneman, 1992), but these advantages may not be realized if employees react negatively or apathetically to their raises. In addition to the direct costs of rising wages, the negative effects of merit raises may also cost organizations indirectly in terms of lost management credibility, declines in worker morale, and lower performance levels (Gerhart & Rynes, 2003).

Taking the criticisms and limitations of merit pay systems noted above into account, there are two key issues that have yet to be formally incorporated into empirical merit pay models—pay raise expectations and whether individuals have a “line of sight” between their performance and their raises, vis-à-vis, their pay-for-performance (PFP) perceptions (Gerhart & Rynes, 2003). The first issue concerns what people expect to receive under merit pay systems. Below we examine how existing research findings about expectation fulfillment in other areas of organizational behavior may extend to employees’ reactions to their merit pay raises. The

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John Schaubroeck, LeBow College of Business, Department of Management, Drexel University; Jason D. Shaw and Michelle K. Duffy, Carlson School of Management, University of Minnesota; Atul Mitra, College of Business Administration, University of Northern Iowa.

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Correspondence concerning this article should be addressed to John Schaubroeck, LeBow College of Business, Department of Management, Drexel University, Philadelphia, PA 19104. E-mail: jschaubroeck@comcast.net

line of sight issue refers to the extent to which an employee perceives a clear linkage between his or her job behaviors and the results that accrue to himself or herself (e.g., rewards) and/or the work unit (e.g., service reputation; R. L. Heneman, Ledford, & Gresham, 2000). In the merit pay literature, this concept is often referred to as PFP perceptions (e.g., R. L. Heneman, Greenberger, & Strasser, 1988) and is akin to instrumentality beliefs in motivation models (Vroom, 1964).

It is unlikely that all employees will routinely receive exactly the raise they think they deserve, but we argue that a simultaneous consideration of pay raises, pay raise expectations, and PFP perceptions will provide more explanatory power in terms of individual reactions than the simple consideration of merit pay raise size. First, we argue that merit raise size, expectations about future raise levels, and beliefs about the perceived strength of the PFP contingency jointly relate to pay- and work-related reactions. We developed an interactive model whereby PFP perceptions play a prominent role in determining how employees react to discrepancies between the merit raise they actually receive and the raise they had earlier expected.

We focus on four employee responses that are central in the pay literature. Research demonstrates that evaluations of raise magnitude (or subjective magnitude of the raise) and affective reactions (e.g., happiness or unhappiness with it) are important reactions in pay raise contexts (e.g., Mitra et al., 1997; Shaw et al., 2003; Worley, Bowen, & Lawler, 1992). Moreover, because merit raises are permanent increases to base pay, they may influence broader reactions to the pay system, including pay-level satisfaction (Williams et al., 2006). We also focus on turnover intentions because compensation consistently relates to quit decisions and organizational turnover rates (e.g., Peterson & Luthans, 2006; Shaw, Delery, Jenkins, & Gupta, 1998).

### Components of an Under-Met and Over-Met Expectations Model

#### *Merit Pay Raise Size*

The literature generally indicates that merit pay raises are positively related to reactions such as subjective magnitude, pay raise happiness, and pay satisfaction (e.g., Gupta, 1980; Mitra et al., 1997) and negatively related to withdrawal behaviors such as turnover (e.g., Chiu, Luk, & Tang, 2002). Larger merit pay raises may elicit positive reactions not only because they yield benefits in terms of higher base pay levels over time (e.g., Gerhart & Rynes, 2003) but also because they signal positive exchange relationships with supervisors and the organization, provide affirming feedback on an individual's performance, create favorable social comparisons with others, and indicate higher levels of power and control in the organization (e.g., Thierry, 1992). On the basis of these various psychological and the material benefits of receiving higher merit raises, we predicted the following:

*Hypothesis 1:* Merit pay raise size will be positively related to subjective magnitude of the raise, pay raise happiness, and pay-level satisfaction, and negatively related to turnover intentions.

#### *Raise Expectations*

Expectations about future pay raises may be cultivated by past experiences, announcements by managers of average merit pay raise percentages for the merit pool, and feedback that individuals receive about their performance. People often have unrealistically optimistic expectations concerning the rewards they will receive because they overestimate the positive qualities of their own performance relative to others (Campbell, Campbell, & Chia, 1998). In addition, research clearly demonstrates that individuals are better adapted to handling difficulties and unanticipated events when their initial expectations are low (e.g., Wanous, Poland, Premack, & Davis, 1992). Buckley, Fedor, Veres, Wiese, and Carraher (1998), for example, found that a general "expectation lowering procedure" was positively related to job satisfaction and negatively related to turnover. All else equal, then, higher expected raise levels should relate negatively to the perceived magnitude of the actual raise levels as well as to personal disappointment (lower happiness) with the reward level (see Mitra et al., 1997). In addition to Buckley et al.'s findings on satisfaction and turnover, Williams et al. (2006) argued that, after controlling for pay level, "factors that raise employees' pay expectations are likely to decrease pay-level satisfaction" (p. 394). On the basis of these observations, we predicted the following:

*Hypothesis 2:* Expected merit pay raise will be negatively related to subjective magnitude of the raise, pay raise happiness, and pay-level satisfaction, and positively related to turnover intentions.

#### *PFP Perceptions*

Researchers often argue that the perceived linkage between performance and pay (or PFP perceptions) is a major determinant of reward satisfaction and intent to remain in an organization (e.g., Gupta, 1980). Gerhart and Rynes (2003) suggested that because managers are reluctant to make strong performance appraisal and pay raise differentiations, weak PFP perceptions were a common problem with merit pay programs.

Gupta (1980) offered several justifications for expecting that low PFP perceptions would result in negative individual reactions. First, high PFP beliefs offer employees a sense of control over their behavior and the results that accrue to it. Such perceptions imply consistency and certainty about the relationship between behavior and rewards, and these factors are viewed as key aspects of just procedures (Lind & Van den Bos, 2002). Second, people tend to perceive that strong procedures are associated with favorable performance-reward contingencies and thus more equitable rewards (Colquitt, Scott, Judge, & Shaw, 2006). A high PFP perception increases the likelihood that input-to-reward ratios will be perceived by employees as being the same across all employees, thus increasing their satisfaction. Equity theorists argue that perceived inconsistencies between employees' contributions and reward levels create feelings of inequity, especially when they perceive these inconsistencies in relation to the contributions and rewards of referent others. People respond to this dissonance in adverse cognitive and behavioral ways. Third, because effective performance-based pay systems focus on specific rather than global reward criteria, a belief that pay is related to performance

should reduce ambiguity and increase role clarity. Poorly designed merit pay and other reward systems (e.g., seniority-based pay) leave “the employee unable to alter behavior to meet the criterion adequately” (Gupta, 1980, p. 816).

Although somewhat sparse, the empirical literature on PFP perceptions suggests that higher PFP perceptions will relate positively to evaluations and affective responses to raises (e.g., Fong & Schaffer, 2003; R. L. Heneman et al., 1988) and pay-level satisfaction (e.g., Gupta, 1980). Thus, we predicted the following:

*Hypothesis 3:* PFP perceptions will be positively related to pay raise happiness and pay-level satisfaction, and negatively related to turnover intentions.

### Development and Extension of the Under-Met Expectations Model

Locke (1976) summarized the under-met expectations model:

When a person expects a pleasant event to occur, he often begins to anticipate the actual event and the pleasure it will bring, for example, by fantasizing or contemplating its consequences or by telling others about it. If the event then fails to come about, it may be more disvalued than if it had not been expected in the first place, perhaps due to the heightened contrast between the anticipated success and the failure that results. On the other hand, a person who expects failure in attaining some value may have time to erect some defenses against it or to activate coping mechanisms that will lessen the disappointment. (p. 1303)

There is considerable evidence that people react very negatively to under-met expectations. For example, research on relative deprivation (Corning, 2000), under-payment inequity (Colquitt et al., 2006), unequal social treatment (Duffy, Ganster, Shaw, Johnson, & Pagon, 2006), and negative emotional consequences observed when newcomer’s work experiences fall short of their initial expectations (e.g., Major, Kozlowski, Chao, & Gardner, 1995) are examples that are consistent with strong negative effects of under-met expectations. Conversely, events associated with attaining or exceeding personal aspirations are found to be among the strongest influences on positive affect (see Weiss & Cropanzano, 1996, for a review).

There is not a strong body of evidence that people react with more or less intensity to under-met expectations as compared with over-met expectations (see Coughlan & Connolly, 2001, for an exception). Some recent research on the psychology of surprise suggests that reactions to under- and over-met expectations are not always similar (Teigen & Keren, 2002, 2003). These studies suggest that perceptions of control, like those reflected by PFP perceptions in a merit raise context, influence the extent to which over- and under-met expectations produce strong reactions. We address these issues below.

### *PFP Perceptions and Expectation-Discrepant Pay Raises*

In his elaboration of the under-met expectations model, Locke (1976) argued that the emotion of surprise is an important factor in understanding the effects of under-met and over-met expectations. Surprise—whether positive or negative—is defined as a reaction to events that conflict with an individual’s prevailing schema (Meyer, Niepel, Rudolph, & Schuetzwohl, 1992). For our purposes, a pay

raise that falls short of or exceeds expectations is a surprise. In a series of experiments, Teigen and Keren (2002) found that unexpected successes were more surprising than unexpected failures when the individual had little or no personal control over the outcome. Conversely, unexpected failures were more surprising than unexpected successes when the individual had high personal control over the outcome. As Teigen and Keren (2003) noted, “surprises are generally created by low-probability outcomes, but not all low-probability outcomes are necessarily surprising” (p. 57).

This psychology of surprise and the perception of personal control may be extended to predict a three-way interaction among actual merit pay raises, pay raise expectations, and PFP perceptions. PFP perceptions reflect the extent to which an employee believes that his or her performance will be reliably related to merit pay raises. Thus, having high PFP perceptions implies that individuals believe they can receive higher raises by pursuing strategies such as increasing their effort and performance quality and by enhancing their skills. In this sense, PFP provides the individual with control over his or her future merit raises, and as we noted, control has been found to enhance the effects of surprises. Table 1 shows a matrix of expected results under conditions of low and high PFP and unexpectedly low and unexpectedly high raises. Receiving an unexpectedly low or high pay raise when PFP perceptions are high (see quadrants “a” and “c” in Table 1) is what Teigen and Keren (2002) have referred to as a “controlled action outcome” (p. 249). Especially when they perceive high PFP, individuals are likely to see pay raises that exceed expectations as being a pleasant surprise. Not only will such persons receive more income than they expected but a high raise is a form of favorable recognition and it may enhance satisfaction with rewards because he/she now knows that performing well can lead to even bigger rewards than he/she expected (see quadrant “c” in Table 1). Conversely, in such high-control situations, reactions to unexpected failures, such as a lower than expected pay raises, are likely to be even more surprising (see quadrant “a” in Table 1; Teigen & Keren, 2002). As Kahneman and Miller (1986) observed, people direct a great deal of attention to such unexpected unfavorable

Table 1  
*Predicted Responses of Employees to Pay-for-Performance (PFP) Perceptions and Relation of Actual Pay Raise to Expected Pay Raise*

Raise expectation	PFP perception	
	High PFP	Low PFP
Lower than expected raise	(a) “Controlled action outcome”; Intense disappointment, adverse effects on satisfaction and organizational attachment	(b) “Chance outcome”; Minimal disappointment, little change in satisfaction and organizational attachment
Higher than expected raise	(c) “Controlled action outcome”; Short-term joy, increased satisfaction and organizational attachment	(d) “Chance outcome”; Short-term joy, little or no change in satisfaction and organizational attachment

outcomes as they are psychologically very salient deviations from the schema about events that they had previously maintained. Given the unfavorable nature of the surprising event, the emotion of surprise quickly devolves into negative emotions, such as anger, disgust, anxiety, and despair. Thus, when PFP perceptions are high, we expect that individuals' reactions to under-met expectations (i.e., an unexpectedly low pay raise) will be stronger than reactions to over-met expectations (i.e., an unexpectedly high pay raise). This contrast is similar to the prospect theory value function in which losses of outcomes are experienced more negatively than gains in outcomes are experienced positively (Kahneman & Tversky, 1979).

When individuals believe that merit pay raises are not related to performance levels (low PFP perceptions), assigned raises are consistent with what Teigen and Keren (2002) call "chance" outcomes. In these situations, employees are more psychologically prepared for low rewards even when they believe they have performed well because they believe there is not much they can do to increase the likelihood of receiving a positive outcome. Because individuals believe they have little control, a raise that is lower than expected may produce some level of disappointment just as not winning a bet that depends on chance is often disappointing, but the reaction is likely to be muted and of limited duration because of the low expectation that the system rewards good performance (see quadrant "b" in Table 1). In contrast, in the same situation in which PFP perceptions are low and outcomes are perceived as being based on chance, pay raises that are higher than expected are likely to elicit stronger positive reactions. In a manner consistent with winning a game of chance (e.g., picking the winning "long-shot" horse in a race), we expect that receiving a larger than expected raise when PFP perceptions are low will result in some elation (see quadrant "d" in Table 1). Consistent with this reasoning, Teigen, Evensen, Samoilow, and Vatne (1999) found that in these situations, participants in their experiments reported being very surprised and were likely to describe their emotional reactions as feelings of being exceptional and lucky. However, such outcomes are not likely to change one's beliefs about the job or organization, and thus one would not expect satisfaction or attachment to the organization to be affected.

To summarize, drawing on recent research on control, probabilities, and surprise, it is straightforward to extend the under-met expectations model and predict a three-way interaction among merit pay raise size, pay raise expectations, and PFP perceptions in relating to emotions and attitudinal reactions. When PFP perceptions are high, lower than expected pay raises should be more "contrary to expectation" (Teigen & Keren, 2002, p. 265), or more surprising, than higher than expected raises. Stated in terms of slopes, when PFP perceptions are high, the relationship between merit pay raises and personal reactions (e.g., pay raise happiness) should be stronger when pay expectations are high than when pay raise expectations are low. When PFP perceptions are low, higher than expected raises should be more pleasing surprises than lower than expected raises are unpleasant surprises. Also when PFP perceptions are low, the relationship between merit pay raises and personal reactions should be stronger when raise expectations are low than when raise expectations are high.

*Hypothesis 4:* There will be a three-way interaction between merit pay raise size, the expected merit pay raise, and PFP

perceptions in predicting employee reactions (subjective magnitude of the raise, pay raise happiness, pay-level satisfaction, and turnover intentions). When PFP perceptions are low, the relationship between merit pay raises and reactions will be stronger when pay expectations are low. When PFP perceptions are high, the relationship between merit pay raises and reactions will be stronger when pay expectations are high.

### Mediation Effects

The extant literature also provides some guidance in terms of the causal sequence of our hypothesized dependent variables. The most proximal reaction to the knowledge of an individual's merit pay raise is likely to be a judgment concerning the magnitude of the raise. Although individuals may experience several reactions to raise levels in quick succession, it is reasonable to suggest that one of the initial reactions will be a judgment about whether the raise is small, large, or somewhere in between. Although there are no definitive tests in the literature, some researchers also argue that judgments of the subjective magnitude of the raise presage affective reactions, such as pay raise happiness (Mitra et al., 1997). Consistent with affective events theory (Weiss & Cropanzano, 1996) and other perspectives, affective reactions are, in turn, considered to be determinants of various context-specific attitudes, such as pay-level satisfaction, as well as having both indirect (as mediated by work attitudes) and direct influences on intentions to behave in various ways. Being notified of a merit pay raise is a good example of a discrete organizational event that should trigger this causal sequence. Thus, we predicted the following:

*Hypothesis 5:* The three-way interaction effect of merit pay raise size, expected merit pay raise, and PFP perceptions on pay raise happiness will be mediated by subjective magnitude of the raise. Pay raise happiness will, in turn, mediate the effects of subjective magnitude on pay-level satisfaction and turnover intentions.

### Method

#### Sample

Data were collected in two waves from full-time employees of a university hospital in a medium-sized, midwestern U.S. city. This was part of a larger study on employee pay perceptions and attitudes. Merit increases were administered at the department level by direct supervisors once each year. Employees received a formal performance evaluation at the end of the calendar year, the merit pool level was announced by university administrators early in the next calendar year, employees were made aware of their pay raise and new pay level by the end of March, and new pay levels took effect on July 1—the beginning of the new fiscal year. Performance evaluations and pay raise assignments were made by direct supervisors. The performance evaluation system was standard across the university. Supervisors and employees discussed and agreed on the essential functions in the job and the amount of time spent completing these functions (weights). Performance evaluation scores were generated on a standard university form and were a multiplicative function of performance on the agreed-

upon dimensions by the weights. All hospital employees were eligible for a merit pay raise.

A few weeks before the Time 1 data collection, supervisors were informed that raises would average 5% across departments and were told to inform their subordinates. To comply with the request of hospital administration that all employees have opportunities to participate, we administered questionnaires in a conference room near the cafeteria for 5 consecutive days during the lunch periods for all three shifts (11 a.m.–1 p.m., 7 p.m.–9 p.m., and 1 a.m.–3 a.m.). A total of 432 employees participated at Time 1. Four months after merit pay increases were allocated (8 months after Time 1), we again administered questionnaires over a 5-day period during the lunch periods. A total of 464 employees participated at Time 2; 177 of these participants had also participated in the first phase. About 2,800 individuals were employed at the hospital at the time of the study. Thus, about 15% of the total employee population participated at Time 1, about 17% participated at Time 2, and about 6% participated in both phases. Missing data reduced the analysis sample size to 140.

Participants' job titles included all major categories in the hospital, for example, nurses, physicians, laboratory technicians, administrators, staff associates, and housekeepers. The average age of longitudinal participants was 37 years; 77% were women, and the average tenure was 9 years. These sample characteristics were similar to estimates (average age approximately 38–39 years; 79% women) provided by the hospital. The profile of job titles of the longitudinal participants was also very similar to an actual profile of job titles provided by the hospital. A statistical comparison of the characteristics of two-wave participants with those participating only in Time 1 or Time 2 revealed that longitudinal participants had slightly higher pay levels than the other groups.

#### Measures—Independent and Dependent Variables

*Merit pay raise size* (between Time 1 and Time 2) was computed as the percentage increase in pay using pay information from the published state budget located in the university's library. The natural log transformation was conducted with this variable prior to its inclusion in the analyses.

*Expected pay raise* was measured at Time 1 with the item, "As a percentage of your current pay, how large do you think your pay increase will be this year? \_\_\_\_ %."

*FPF perceptions* were measured at Time 1 with a four-item scale adapted from Perry and Pearce (1983) and R. L. Heneman et al. (1988). The items had seven Likert-type response options. A sample item follows: "The best performers will get the biggest pay raises."

*Subjective magnitude* of pay raise was measured by the question, "What do you think about the change in your pay between the last year (*after* [date]) and this year (*after* [date])?" The items had seven response options ranging from 1 (*there was no change in my pay*) to 7 (*there was an enormous change in my pay*). Categories 2–6 were anchored with the descriptors *tiny*, *small*, *modest*, *considerable*, and *substantial*.

*Pay raise happiness* was assessed at Time 2 using a 100-mm dependent-response rating line developed by Mitra (1993). Participants were instructed to compare "what you are paid now" with "what you were paid last year" and to mark an "X" on the line "where it matches your feelings about your new pay level." *Very unhappy* anchored the left end, and *very happy* anchored the right

end. Although it is difficult to gauge the reliability of single-item measures, Russell and Bobko (1992) have provided evidence that they are superior to coarser Likert-type rating scales when attempting to detect moderator effects in multiple regression analysis.

*Pay-level satisfaction* was measured at Time 2 using five items adapted from Camman, Fichman, Jenkins, and Klesh (1983) and H. G. Heneman (1985). The items had seven Likert-type response options. A sample item follows: "Considering my skills and efforts, my pay is fair."

*Turnover intention* was measured by a single item from Camman et al. (1983) at Time 2: "How likely is it that you will look for a new job in the next year?" Response options ranged from 1 (*very unlikely*) to 7 (*very likely*).

#### Measures—Control Variables

Individuals with higher base pay tend to have more favorable pay-related attitudes (Gerhart & Milkovich, 1992), and they tend to have higher thresholds for perceiving a raise as being high in magnitude (H. G. Heneman & Ellis, 1982; Hinrichs, 1969; Rambo & Pinto, 1989). *Base salary* was therefore controlled in the analyses. We also controlled for the *estimated market salary* for the job title of each participant. State and national salary data for the year following the period of the study (2004) was obtained from Career InfoNet ([www.acinet.org](http://www.acinet.org)). We used the median market salary associated with the participant's job title for the state in which the study was conducted as the market salary variable. In addition, we controlled for years of *education*. A higher education is also often related to the pay level and market salary, and it plausibly influences pay raise expectations. Education is also commonly associated with pay-level satisfaction (Williams et al., 2006).

## Results

#### Analysis of Missing Data Patterns

An analysis of the missing data among all participants who provided responses at either Time 1 or Time 2 was conducted. The nonsignificant result observed in conducting Little's (1988) test,  $\chi^2(142) = 154.49$ , *ns*, indicates that the data are *missing completely at random* (MCAR). In this circumstance, analyses based on list-wise deletion of missing data are shown to produce unbiased estimates (Allison, 2001, pp. 6–8). Multiple imputation using statistical methods, such as maximum likelihood, can often improve on estimates that are based on list-wise deletion even in MCAR situations, because these methods can improve statistical power without introducing additional bias (Allison, 2001). Despite their occurring at random, there were a large range of different variables that were missing at one of the data collection periods, and there were some substantial correlations between the missing-present status of variables at both periods. Thus, the number of imputed values would in some cases exceed the number of observed values for some variables, and for many participants that number of imputed values would exceed the number of variables on which they had reported. For this reason, we followed Allison's (2001) recommendation and analyzed the data set with list-wise deletion of the missing values.

#### Hypothesis Tests

The correlations among all analysis variables and coefficient alpha reliabilities for composite scales are shown in Table 2. The

Table 2  
Descriptive Statistics and Correlations

Variable	M	SD	1	2	3	4	5	6	7	8	9
1. Market salary (Archival; ×1,000)	42.80	18.32									
2. Base salary (Time 1; ×1,000)	36.63	26.90	.74**								
3. Education (Time 1)	3.31	0.98	.34**	.33**							
4. Merit pay raise size (Interim)	5.09	3.89	-.10	-.13	-.06						
5. Expected merit pay raise (Time 1)	3.54	1.87	.01	.01	-.00	.14					
6. PFP perceptions (Time 1)	3.35	1.55	.03	-.06	-.20*	.09	.11	(.89)			
7. Subjective magnitude of the raise (Time 2)	2.91	1.16	.07	.06	-.02	.47**	.04	.14			
8. Pay raise happiness (Time 2)	47.36	28.39	.14	.05	.12	.13	.07	.16*	.55**		
9. Pay-level satisfaction (Time 2)	3.42	1.67	.16	.10	.11	.14	.04	.20*	.39**	.67**	(.90)
10. Turnover intentions (Time 2)	3.23	2.15	-.02	-.11	-.01	-.10	-.02	-.20*	-.32**	-.33**	-.42**

Note. *ns* = 140. Coefficient alpha reliabilities are reported in the main diagonal where appropriate. PFP = pay-for-performance.  
\* *p* < .05. \*\* *p* < .01.

hypothesized dependent variables are significantly correlated with absolute values ranging from .32 to .67, with a mean of .43 and a median of .41.

A hierarchical regression approach with mean-centered predictors was used to test Hypotheses 1–4 (see Table 3). As Table 3 shows, merit pay raise level is significantly associated with subjective magnitude of the raise (*b* = 0.53, *p* < .01) and pay-level satisfaction (*b* = 0.24, *p* < .05), but it is not significantly related to merit raise happiness (*b* = 3.66, *ns*) or turnover intentions (*b* =

–0.27, *ns*). Thus, only partial support is found for Hypothesis 1. Hypothesis 2 is not supported, as expected merit pay raise is not significantly associated with any of the dependent variables. Hypothesis 3 is supported. PFP perceptions are significantly related to pay raise happiness (*b* = 3.02, *p* < .05), pay-level satisfaction (*b* = 0.24, *p* < .01), and turnover intentions (*b* = –0.31, *p* < .01).

The critical tests of our theory—the interaction among merit pay raise level, expected pay raise, and PFP perceptions—are in the columns labeled Step 3 of Table 3. As the table shows, the

Table 3  
Results of Regression Analyses (Standardized Coefficients)

Variable	Subjective magnitude of the raise			Pay raise happiness		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Market salary	.03	.01	.01	.16	.16	.16
Base salary	.12	.13	.12	-.08	-.10	-.10
Education	-.02	-.01	-.03	.14	.14	.12
Merit pay raise size (Raise)	.46**	.44**	.37**	.13	.12	.05
Expected merit pay raise (Expectation)	.03	.02	.10	.07	.07	.15*
PFP perceptions (PFP)	.12	.13	.13	.17*	.17*	.17*
Raise × Expectation		.03	.40**		.02	.41**
Raise × PFP		-.04	-.11		.05	-.01
Expectation × PFP		-.01	.12		-.01	.12
Raise × Expectation × PFP			.44**			.45**
Total <i>R</i> <sup>2</sup>	.23**	.23**	.28**	.08	.09	.14*
Δ <i>R</i> <sup>2</sup>	.23**	.00	.05**	.08	.00	.05**
Variable	Pay level satisfaction			Turnover intentions		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Market salary	.13	.17	.17	.18	.16	.16
Base salary	-.01	-.05	-.07	-.26*	-.22*	-.22
Education	.12	.12	.10	-.04	-.03	-.03
Merit pay raise size (Raise)	.14*	.16*	.08	-.12	-.04	-.13
Expected merit pay raise (Expectation)	.03	.04	.12	-.04	-.11	-.04
PFP perceptions (PFP)	.22**	.23**	.23**	-.22**	-.25**	-.25**
Raise × Expectation		-.03	.38*		.01	-.43**
Raise × PFP		.18*	.13		-.09	-.03
Expectation × PFP		-.02	.12		.09	-.05
Raise × Expectation × PFP			.48**			-.51**
Total <i>R</i> <sup>2</sup>	.10*	.13*	.19**	.09*	.10	.17**
Δ <i>R</i> <sup>2</sup>	.10*	.03	.06**	.09*	.02	.07**

Note. *n* = 140. PFP = pay-for-performance.  
\* *p* < .05. \*\* *p* < .01.

three-way interaction is significantly related to all four dependent variables, with explained variance change ranging from 5% to 7% ( $p < .01$ ) across the variables. To evaluate the level of consistency with the predicted form, we plotted the significant interactions using values of plus and minus one standard deviation from the mean of the independent variables. The plotted interactions when subjective magnitude of the raise and pay-level satisfaction are the dependent variables appear in Figure 1. We examined these patterns visually and evaluated the simple effects for statistical significance. The top two plots (labeled “A”) show the interaction predicting subjective magnitude of the merit raise.

As Figure 1 shows, when PFP perceptions are low, the relationship between merit pay raise size and subjective magnitude is not significant regardless of the expected pay raise level. In contrast, when PFP perceptions are high, a strong positive relationship is seen between merit pay raise size and subjective magnitude ( $p < .01$ ) when expected raise levels are high, as predicted. When PFP perceptions are high and expected raise levels are low, the relationship between merit raise size and subjective magnitude is negative, but a test of this simple effect shows it is not significant. A similar pattern is found when pay-level satisfaction is the

dependent variable (plots are labeled “B” in Figure 1). When PFP perceptions are low, the relationship between merit pay raise size and pay-level satisfaction is not significant for either low or high expected raise level. When PFP perceptions are high, the relationship between merit raise size and pay-level satisfaction is significant and positive ( $p < .01$ ) when raise expectations are high and, again, slightly negative (but not statistically significant) when raise expectations are low. Similar plot patterns are found with the other dependent variables—pay raise happiness and turnover intentions. When viewed in toto, the interaction results provide partial support for the extended model of expectation realization and its influence on personal reactions. No effect of merit raise level is found when PFP perceptions are low. The expected pattern of relationships is largely confirmed when PFP perceptions are high, in particular the relationship between merit raise size and the dependent variables is stronger when PFP perceptions are high and when a higher raise is expected.

We tested Hypothesis 5—the mediation hypothesis—using LISREL 8.50 (Jöreskog & Sorböm, 2001), with each analysis construct represented by its observed variable as in traditional path analysis rather than a latent variable (structural equation) model.

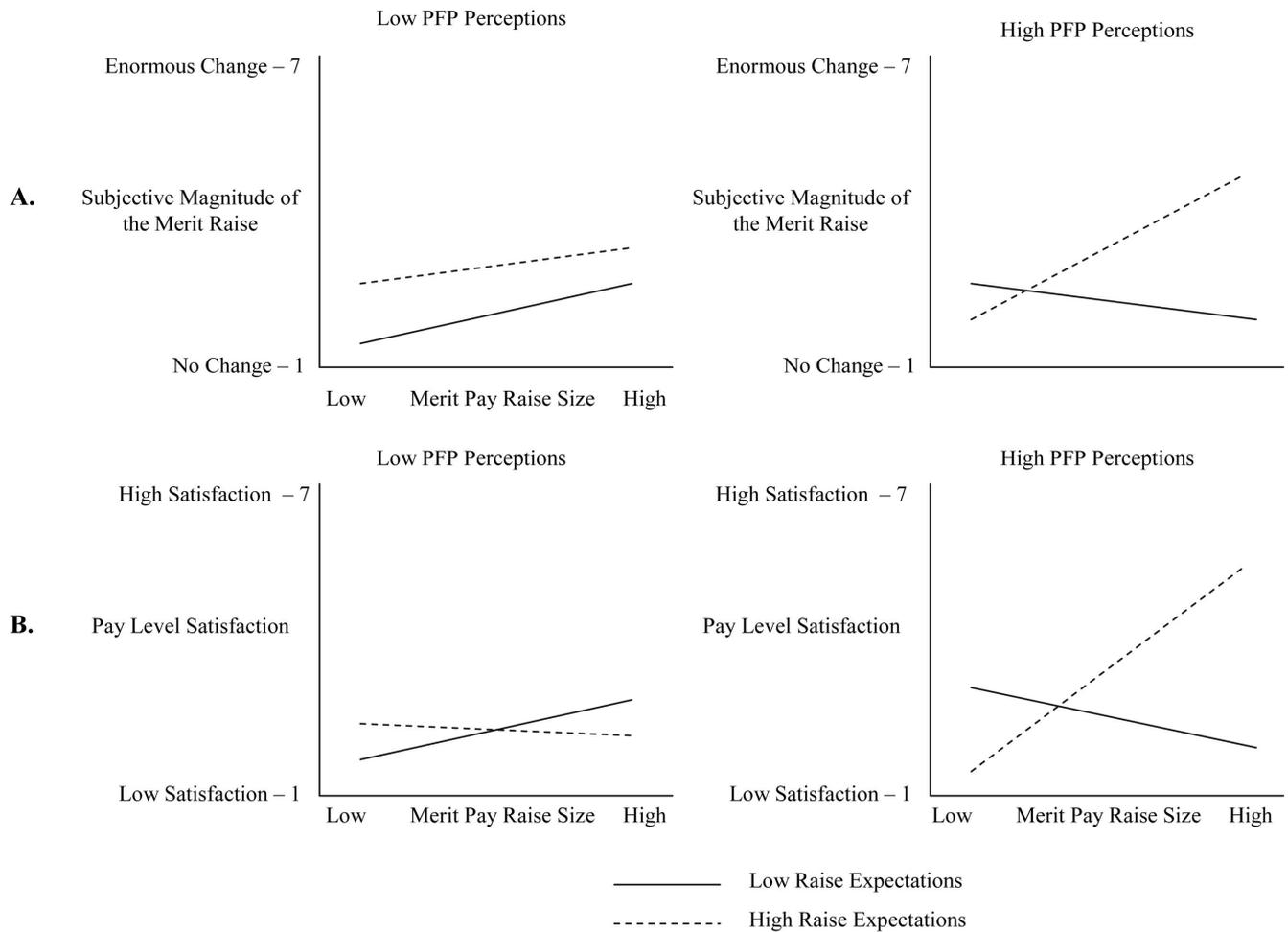


Figure 1. Interaction among merit pay raise size, expected merit pay raise, and pay-for-performance (PFP) perceptions in predicting subjective magnitude (A) and pay-level satisfaction (B).

All independent variables shown in Table 3—including main effects, two-way interactions, and three-way interactions—were specified as separate exogenous variables and allowed to correlate. The structural relationship between each of these exogenous variables and subjective magnitude of the pay raise were estimated, whereas all the direct effects of these exogenous variables on the other dependent variables (putative responses to subjective magnitude of pay raise) were not estimated in this particular model. As per Hypothesis 5, and as illustrated in Figure 2, the causal order proceeded from subjective magnitude to pay raise happiness to pay-level satisfaction and, separately, to turnover intentions. This model (hereafter labeled “Model 1”) provides a strong fit with the data, with a goodness-of-fit index (GFI) of .96, a normed fit index (NFI) of .92, a nonnormed fit index (NNFI) of .98, and a standardized root-mean-square residual (SRMSR) of .054. The overall model chi-square is not significant,  $\chi^2(42, N = 140) = 48.06, ns$ . The effect of the hypothesized three-way interaction (Hypothesis 4) on subjective magnitude of pay raise is significant, and the hypothesized paths linking the dependent variables (as per Hypothesis 4) are all significant.

To test further the mediation predicted in Hypothesis 5, we respecified the model and included a direct path between subjective magnitude and pay-level satisfaction (Model 2) and between subjective magnitude and turnover intentions (Model 3). For Model 2, the GFI did not improve, and the decrease in chi-square is negligible,  $\Delta\chi^2(1, N = 140) = 0.02, ns$ . In addition, the direct path between subjective magnitude and pay-level satisfaction is not significant ( $b = -0.01, ns$ ). For Model 3, however, decrease in chi-square is significant,  $\Delta\chi^2(1, N = 140) = 4.12, p < .05$ ; the direct effect of subjective magnitude on turnover intentions is significant ( $b = -0.19, p < .05$ ); and the NFI, NNFI, and SRMSR improve slightly to .93, .99, and .051, respectively. Thus, the

mediation predicted in Hypothesis 5 (applied to the three-way interaction as antecedent variable) is partial only.

Discussion

We examined the relationships among actual merit pay raises, expected merit pay raises, and PFP perceptions in relating to a variety of important employee responses, including raise evaluations, and changes in emotions, attitudes, and behavioral intentions. Our results show that favorable and unfavorable discrepancies between the raises employees receive and those they expect to receive are associated with substantial responses only among those who have high PFP beliefs. The results may help clarify the nature of the impact of clear line of sight on employees’ attitudes and behavior. These findings partially support our extensions of under-met expectations theory; that is, the results generally support our theorizing when PFP perceptions are high, but the anticipated positive effects of over-met expectations when PFP are low are not observed.

In terms of the main effect results, our results show inconsistent effects of merit pay raises and raise expectations on important dependent variables. Williams et al. (2006) reported a statistically significant, but modest, meta-analytic correlation of .08 between merit pay raises and pay-level satisfaction. The zero-order correlation with pay-level satisfaction in our sample is .13 ( $p < .10$ ), and pay raise level was significantly related only to subjective magnitude of the raise and pay-level satisfaction in the multivariate analyses. Thus, although the signs of the merit pay coefficients are in the anticipated directions, our results are consistent with the pattern in the broader literature that the simple effects of merit raises are not substantial. PFP perceptions exhibit significant and moderate-in-magnitude associations across our array of dependent variables, findings that are consistent with the PFP perceptions

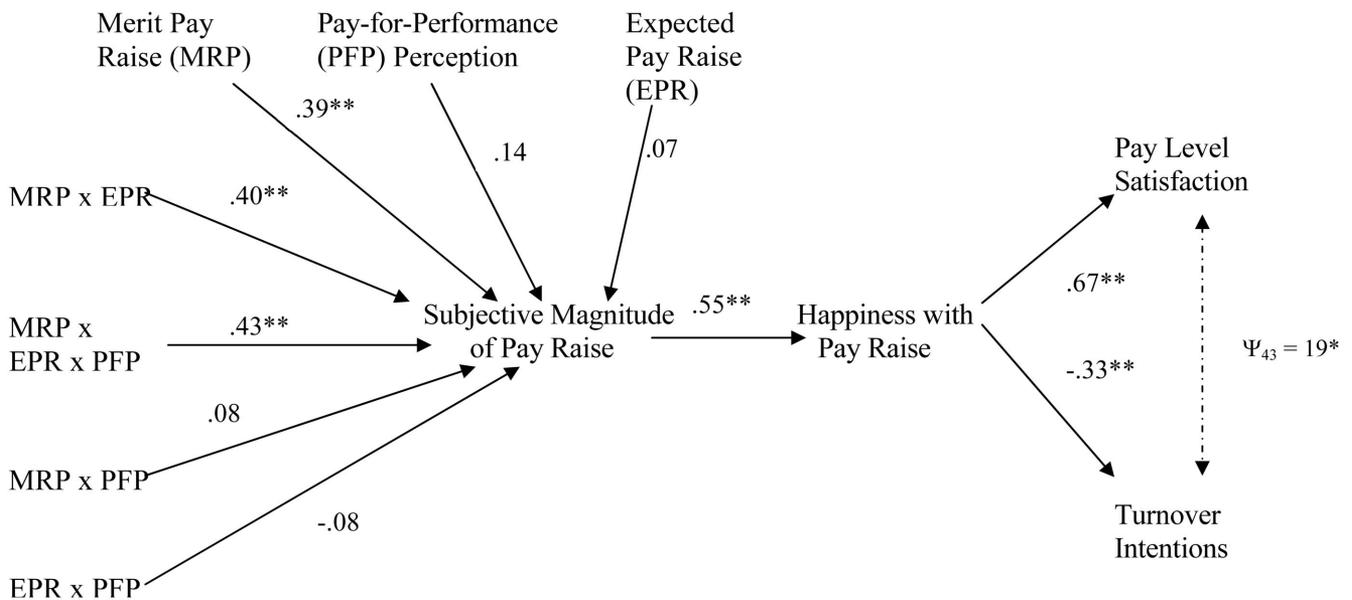


Figure 2. Path analysis. Note. The correlations among the exogenous variables are omitted from this figure. The effects of market salary ( $b = 0.01, ns$ ), base salary ( $b = 0.12, ns$ ), and education ( $b = -0.03, ns$ ) on subjective magnitude of raise, and their correlations with other exogenous variables, are also not shown. \*  $p < .05$ . \*\*  $p < .01$ .

literature (e.g., Gupta, 1980; R. L. Heneman et al., 1988) as well as agreeing with the burgeoning justice literature. Indeed, it is reasonable to assert that the merit pay literature demonstrates convincingly that, in terms of direct effects, individual judgments about the performance-related connections about raises are more important than actual raise levels in terms of affecting employee-related responses.

In terms of our extension of under-met expectations theory, our results suggest that favorable beliefs about the reward system encourage individuals to make sense of their raises in terms of the organization's evaluation of their contributions rather than on extraneous factors. As expected, predicted reactions are negative when raises fall short of expectations and PFP perceptions are high. In these controlled-action situations (Teigen & Keren, 2002), the surprises associated with unexpectedly low raises are potent. Matched expectations, when PFP beliefs and expectations are both high, had the anticipated positive effects on individuals' evaluations, emotions, and intentions. Although the results were not expected, it is interesting that the interactive effects of merit pay raises essentially do not affect employees' reactions regardless of expectations when PFP perceptions are low. At least two post hoc interpretations of these findings are possible. First, when PFP perceptions are low, individuals might simply place little faith in the level of their expectations. Unfavorable PFP perceptions seem to wash out judgments about the size of pay raises, including pay-level satisfaction, decisions about job search, and other variables. Second, it is possible that individuals react as expected to over-met expectations when PFP perceptions are low; that is, they experience elation and feel exceptionally lucky, but these reactions fade over a short period of time. It is worthy to mention here that our dependent variables were collected 4 months after the new pay raises took effect. Recipients had experienced their new pay level for several months. Individuals who received higher than expected raises, but held low PFP perceptions, may have felt thrilled immediately, but their joy may have faded over time as distrust of the pay system returned to prominence. In support of this, some research suggests that these favorable but unexpected events are viewed as transient windfalls or misfortunes, and they influence attitudes only for a short term (Suh, Diener, & Fujita, 1996). The empirical evidence on positive reactions to these events has been generated in short-term laboratory settings (e.g., Teigen & Keren, 2002). Designing research to tease out the long- and short-term effects of expectation-discrepant pay raises should be a priority.

The research model developed by Coughlan and Connolly (2001) may shed additional light on the pattern of findings we observed. They examined the extent to which confidence regarding one's expectations about performance outcomes, as reflected in the width of a reported confidence interval in expected performance levels, influenced reactions to under-met and over-met expectations. Their findings supported their prediction that participants indicating lower confidence in their expectations exhibited more moderate responses to both over-met and under-met expectations. In developing our predictions, we focused on theoretical linkages grounded in beliefs about controllability, primarily because PFP perceptions are beliefs about system integrity rather than confidence levels specific to a single pay raise event. However, it is possible that PFP perceptions also partially reflect the confidence one has in stating a given pay raise expectation level. If this is the case, the confidence interval around a 3% expected raise for an

individual with a low PFP perception might be rather large. The receipt of a 2% raise might produce little reaction in this case because it falls within a wider band of confidence around the expected raise. If the individual had stronger faith in the extent to which the organization rewards performance with pay raises, however, the confidence interval would be tighter, and 2% may be a big disappointment. To have applied Coughlan and Connolly's hypothesis directly to our pay raise context, we would have had to directly measure the subjective confidence intervals around each person's stated pay raise expectation level. As with the finer grained interpretations of the trends we reported above, we believe that laboratory research or field experimentations of confidence in expectations could profitably distinguish the perceived control that is afforded by having more favorable PFP perceptions from the enhanced beliefs the same people may have in their pay raises. If the effects of pay raises on positive reactions and surprise turn out to be chiefly a function of confidence in one's pay raise prediction, this would have some distinct implications for how organizations manage employees' expectations about future raises.

The relationships between the antecedent variables and the outcomes were mediated primarily by the subjective magnitude of the merit raise, although subjective magnitude directly influenced turnover intentions as well as indirectly through raise happiness. Merit raise happiness, in turn, mediated most of the influence of subjective magnitude on pay-level satisfaction and turnover intentions. Importantly, our results provide some evidence that raise-specific reactions can have relatively strong influences on broader individual attitudes and behavioral intentions. Beyond this, a significant contribution of this study is to show that high pay raises can produce positive reactions, but these effects are found only when they are consistent with prior expectations about raise levels and are accompanied by high PFP perceptions.

As suggested by a reviewer, the direct effect of subjective magnitude on turnover intentions likely reflects some participants' recognition that the market may offer more compensation that they would like to seek for the benefit of household income. This would reflect a kind of wealth-maximizing behavior that may be unaffected by their happiness with the raise and pay-level satisfaction, because the latter are influenced partially by internal equity considerations rather than market opportunities. Although the correlation between the absolute level of the raise and subjective magnitude was very high, in some cases the employee might perceive an objectively high raise as being subjectively low because it still does not bring him or her near to the compensation level that he or she believes is available for him or her on the external market.

### *Practical Implications*

Our findings suggest that to maximize positive reactions to merit pay raises, organizations should cultivate realistic appraisals of the contingency relationship between merit raises and performance, and they should encourage realistic expectations about raises. When managers convince employees that merit pay is contingent on performance, then the positive effects of higher raises and negative effects of lower raises will be more pronounced among employees with higher pay raise expectations. For managers in that situation, it is all the more important that performance contributions of subordinates are strongly related to their pay raise expectations. This requires adept judgment and concerted commu-

nication. It may be expected that high PFP perceptions will erode over time when employees experience repeated unpleasant surprises associated with their merit raises. Moreover, research suggests that rebuilding trust is possible by experiencing consistent and repeated trustworthy behavior—but not when the initial mistrust was established on the basis of a perceived deception on the part of the principal (Schweitzer, Hershey, & Bradlow, 2006). Managers should therefore be especially mindful of the need to communicate information that may favorably influence raise expectations. Employees with initially high PFP perceptions may be particularly likely to perceive an unexpectedly low raise as indicating that they had earlier been deceived, which is one ready attribution for surprise outcomes that are mediated by others. Whereas unexpectedly low raises might signal deception, the potential costs from communicating overly optimistic information to employees may be quite dramatic.

We were surprised by the relatively weak relationship between the level of merit pay raises employees expected and the raise they actually received. Notwithstanding this general trend, there were many employees whose raise expectations and actual raise were the same or in very close proximity; however, the weak relationship between raises and raise expectations suggests that in many cases this organization was prone to poor communications with its employees. Raise expectations are often not well grounded in credible managerial communications, and workers often have an unrealistic view of their place in the merit order. As noted above, however, participants' expectations were not extremely unrealistic, as they expected to get raises that were fairly similar to their peers. Better management communication could alleviate unrealistic expectations, although the flip side is that better communication would probably lower the number of pleasant surprises. Our results suggest that when the "merit" aspect of merit pay raises is not credible or strongly endorsed (i.e., among employees with low PFP beliefs or poor line of sight), neither over-met nor under-met raise expectations influence pay-level satisfaction or turnover intentions. To avoid very weak pay raise effects, which undermine the purposes of merit pay by stimulating only negative emotions at a high cost, managers should consider subordinates' beliefs about the reward system before conveying messages to them about future raises. Managers can regularly survey employees to understand their mean levels of PFP beliefs and expectations, and they can use this information to focus their communications about the company's intentions concerning the merit-pay system and their own policies concerning how raises are distributed.

### Study Limitations

Strengths of our study include a sample that is heterogeneous in scope of occupational status and base pay and a design that unfolded over the course of 8 months. We cannot be certain, however, that these findings generalize to a broader scope of organizations, particularly those that maintain secrecy about individuals' pay levels. It is also unknown how well our sample represents the populations of similar hospitals in the United States. We could not ensure that all participants were knowledgeable about the pay raises of referent others, and it seems likely that the psychological effects of unexpectedly high or low merit raises may be stronger when social comparisons are prevalent. Our confidence in the generalizability of the findings is supported primarily by the

consistency of certain key trends across multiple outcomes that were not highly correlated. Nevertheless, especially given that the dependent variables were measured at the same time, the path-analysis findings should be viewed with caution. They merely suggest the plausible pathways through which our hypothesized interaction effects were carried to different variables. In addition, whereas attrition from the sample was not systematically linked to any study variables, the final analysis sample was relatively small for testing a complex model. More confident conclusions will require that other studies replicate the findings using comparable or larger sample sizes. Moreover, as we noted above, one may expect to observe stronger effects of under-met merit raise expectations if post-test data were obtained closer in time to the raise notification. The responses were not likely affected by "hot" short-term emotional reactions to merit-raise information. Future studies would provide surer conclusions using multiple post-tests covering both the short and relatively long term aftermath of the raise.

We used a single-item dependent-response rating scale to measure pay raise happiness. Although some evidence suggests that this measurement approach is superior in terms of sensitivity in moderated regression analysis (Russell & Bobko, 1992; Shaw & Gupta, 2004), and other research demonstrates strong convergent validity of single- and multi-item measures (e.g., Robins, Hendin, & Trzesniewski, 2001), there are also research reports suggesting less convincing convergent validity evidence and questionable reliability estimates for these measures (e.g., Wanous, Reichers, & Hudy, 1997). We encourage additional research not only on the psychometric properties of these measures but also additional tests of our hypotheses using alternative operationalizations.

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